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LENGTH COMPOSITION OF CALIFORNIA COMMERCIAL CATCH OF PILCHARD, 1919-51

SPECIAL SCIENTIFIC REPORT: FISHERIES No. 105

UNITED STATES DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

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LENGTH COMPOSITION OF CALIFORNIA COMMERCIAL CATCH OF PILCHARD, 1919 TO 1951

By

Margaret M. Calderwood

Special Scientific Report: Fisheries No. 105

Washington, D. C.
September 1953

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The data contained in this paper have been compiled from source files and are presented for use by fishery scientists for study of complex relationships which exist between age classes of a pelagic fishery. Knowledge of the relative size of each age class present in the population is required before changes can be determined. This knowledge is usually obtained by analysis of samples taken from the commercial catch. From this the history of each age class is developed and presented in the form of catch curves (Baranoff, 1918).

During the period of the California sardine fishery for which there are no data from tagging or from age determination, the length composition of the catches provides the only source of data from which catch curves may be derived.

Sardine length data have been shown by Silliman (1945) to be applicable to a period, before 1933, of lower fishing intensity for sardine when his estimate of total annual mortality amounted to 20 percent. Silliman also estimated the sources and degree of error in mortalities calculated from length composition as compared with certain populations having known mortality rates. He concluded (p. 195) that "at mortality rates of up to about 20 percent per year the error is negligible, but increases rapidly with increasing mortality rate above 20 percent. For this reason it is fortunate that other methods are available for the higher mortality rates prevailing under recent levels of exploitation."

For periods during which age data are available from spot samples only, or from incomplete collection, e.g., of otoliths (Mosher, in press), the age composition of small samples may be applied to the more representative samples of length composition of catches throughout a season in order to obtain an estimate of the age composition of the catch (Eckles, in press).

When age data for the catch are not available, length frequency data may further be useful in following changes in size and growth at various fishing intensities.

The following series of tables represents the length composition, so far as obtainable, of the commercial catch of sardines, Sardinops caerulea (Girard) 1854, in California from the 1919-20 through the 1950-51 season.

The length frequency tables are derived primarily from data collected by the California Department of Fish and Game. The tonnages include all records of sardine deliveries to shore plants, and during years when deliveries were made to floaters off San Francisco these are included. The catches of the San Francisco floater fleet were compiled by the U. S. Fish and Wildlife Service. (Anonymous, 1948.)

The problem of sampling populations of migratory fish is not simple. Sette (1924, p. 70) reported results of analysis of data on length composition of catches taken during the first season of the sardine investigation, the winter of 1919-20, on which the sampling program in subsequent years largely is based. He summarizes (p. 90) "it may confidently be assumed that the choice of a sample from the boat load of sardines is truly random . . . the catch of sardines made by the cast of the net into or around a school of sardines is truly random except that schools of fish composed mainly of individuals under eighteen centimeters in length are avoided; but it may not be assumed that the assemblage of sardines in a school is truly random . . . With the sardines carrying on their own selection into schools, it cannot be hoped that validity of sampling may be determined on the basis of established statistical methods based on the random selection of individuals. This need not, however, preclude the investigation of the sardine by representative sampling."

Sette concluded (p. 96) "That to secure a representation sufficient to show the location of a distinct mode to within 10 percent of the probable movement of that mode within one year, a sampling of twice a week is necessary." He also concluded that this frequency of sampling was necessary "to determine the relative importance of fairly well defined and large size-groups within 10 percent error."

Thompson (1926) further emphasized errors of sampling and of selection, and forecast a future need for weighting the samples to the catch. He concluded (p. 188), "It is, from the point of view of the future program of great interest to define the most adequate and representative system of sampling. We have been unable to find any radical need for change from the present method except . . . the possibility of weighting each sample by the amount of the commercial catch it represents."

In the light of subsequent years of study of the fishery, it appears that the behavior of sardines, as reflected in their availability to the fishermen, and the variable contribution of different components of the stock, may magnify the difficulties of representative sampling.

The California Department of Fish and Game has carried on a program of sampling the commercial catch since 1919. The intensity of sampling has varied from year to year and from port to port. When sampling was first started at Monterey and San Pedro (in 1919), samples were taken daily from five boats. Later, semiweekly samples were obtained from five boats. A sample consisted of either 40 or 50 fish. In later years, samples have been taken from five boats daily, semiweekly, or weekly, all samples consisting of 50 fish.

Sardine sampling was extended to include San Francisco by the California Department of Fish and Game during the 1930-31 season. Owing to a lack of personnel, semiweekly sampling was not carried on at first, but whenever feasible 1,000 fish were measured in the middle of each lunar month. Regular sampling was started in 1935-36 and carried on by the California Department of Fish and Game until the 1938-39 season when catches were sampled by both California and the U. S. Fish and Wildlife Service. From that season to date all of the sampling in the San Francisco area has been done by the U. S. Fish and Wildlife Service. During the years of poor fishing in San Francisco and Monterey, samples were taken when fish were available.

The data are grouped in somewhat different time periods in the early records. Since it was difficult to secure monthly catch records for early years, the length frequencies of the samples were weighted to quarterly catch data from 1919 through 1925. Although during this period fishing continued throughout the year, only the fall, winter, and spring landings were used in calculating the season total (April, May, and June were omitted). This was done in order that the length composition of the catch might be comparable with later years when no regular fishing was carried on at this season.

From the 1926-27 through the 1937-38 seasons, catch records were available only by calendar month. All samples were weighted by calendar-month catches. From the 1938-39 season to date, all samples have been weighted to the lunar-month catches.

Because sampling was somewhat irregular in San Francisco from 1930-31 through 1937-38, the weighted frequencies of San Francisco and Monterey have been combined. During several months when fish were landed, no samples were taken in San Francisco. In these instances, the San Francisco catch was weighted to the Monterey samples.

Beginning in 1941-42, the average weight of the 50-fish sample from each boat was obtained. The number of fish caught each week was estimated from the total weight landed at each port divided by the average weight of fish sampled during that period. For seasons prior to 1941 estimates of the number of fish caught during each quarter, month, or lunar month were based on average length and weight data given by Clark (1928, pp. 37-38). Average weights of each size group were multiplied by the frequencies of the lengths in the monthly (or other) summaries to obtain the total weight of the samples. Total weight divided by the total number sampled yielded the average weight of fish taken during the period. The total catch for the period divided by the average weight provided the total number of fish landed. Totals are given in 100,000's of fish. In the few instances when the weighted total does not agree exactly with the catch in numbers of fish as recorded in other publications, the discrepancy is due to rounding of numbers.

During recent years when fishing was poor in Monterey and San Francisco, some of the northern plants had fish trucked north from southern California. All fish taken south of Point Conception were included with the San Pedro catch totals, even though they were delivered to another port. The practice of trucking fish north was initiated in the 1946-47 season.

SOURCE OF DATA

SAN FRANCISCO LENGTH FREQUENCIES:

1919-20 through 1929-30: No records were available, no samples taken.

1930-31 through 1937-38: (Combined with Monterey) Frequencies were tabulated by and weighted to total landing for each calendar month, separately for each port and then combined. When fish were landed and no samples taken, length frequencies were used for corresponding months in Monterey and weighted to the San Francisco catch. This was done in the following instances:

1930-31 - Dec., Feb.
1931-32 - Aug., Feb.
1932-33 - Aug., Sept., Nov., Dec., Jan., Feb.
1933-34 - Aug., Oct., Dec., Jan., Feb.
1934-35 - Aug., Oct., Feb.
1935-36 - Aug., Feb.
1936-37 - Aug.
1937-38 - Feb.

1938-39 through 1950-51: Frequencies were tabulated by and weighted to lunar-month catch. (There was no fishery in San Francisco during either the 1947-48 or 1948-49 seasons.)

SAN FRANCISCO CATCH DATA:

1930-31 through 1937-38: Catch in tons by calendar months were taken from Bureau of Commercial Fisheries (1929-1937) and Bureau of Marine Fisheries (1940).

1938-39 through 1940-41: Catch in tons by lunar month were taken from California Sardine Products Institute records and unpublished records of the San Francisco floater fleet.

1941-42 through 1950-51: Catch in thousands of fish per lunar month were taken from Felin and Phillips (1948); Mosher, Felin, and Phillips (1949); Felin, Phillips, and Daugherty (1949); and Felin, Daugherty, and Pinkas (1950 and 1951).

MONTEREY LENGTH FREQUENCIES:

1919-20 through 1925-26: Frequencies were tabulated by and weighted to quarters by combining calendar-month frequencies.

1926-27 through 1937-38: Frequencies were tabulated by and weighted to calendar-month catch. (Combined with San Francisco for period 1930-31 through 1937-38.)

1938-39 through 1950-51: Frequencies were tabulated by and weighted to lunar-month catch.

MONTEREY CATCH DATA:

1919-20 through 1925-26: Catch in tons by calendar month were taken from California Fish and Game (1920-26).

1926-27 through 1937-38: Catch in tons by calendar month were taken from Bureau of Commercial Fisheries (1929-37) and Bureau of Marine Fisheries (1940).

1938-39 through 1950-51: Same as San Francisco.

SAN PEDRO LENGTH FREQUENCIES:

1919-20 through 1925-26: By quarters; same as Monterey.

1926-27 through 1937-38: By calendar months; same as Monterey.

1938-39 through 1950-51: By lunar months; same as Monterey.

SAN PEDRO CATCH DATA:

1919-20 through 1925-26: By quarters; same as Monterey.

1926-27 through 1937-38: By calendar months; same as Monterey.

1938-39 through 1950-51: By lunar months; same as San Francisco.

I wish to thank O. E. Sette for his many suggestions and his help in compiling these data and Ralph P. Silliman for much of the preliminary work. Dr. Frances N. Clark and others on the staff of the California State Fisheries Laboratory have been exceedingly cooperative in making the original data available. I also am grateful to Dr. E. H. Ahlstrom and John C. Marr for their assistance in the final preparation for publication.

Table 1

CALENDAR DATES OF LUNAR MONTHS FOR SEASONS 1938-39 THROUGH 1950-51

	Lunar Month No.	Designation	Dates
Season 1938-39:	232	"July"	July 12-Aug. 10
	233	"August"	Aug. 11-Sept. 8
	234	"September"	Sept. 9-Oct. 8
	235	"October"	Oct. 9-Nov. 6
	236	"November"	Nov. 7-Dec. 6
	237	"December"	Dec. 7-Jan. 5
	238	"January"	Jan. 6-Feb. 3
	239	"February"	Feb. 4-Mar. 5
	240	"March"	Mar. 6-Apr. 4
Season 1939-40:	246	"September"	Aug. 30-Sept. 27
	247	"October"	Sept. 28-Oct. 26
	248	"November"	Oct. 27-Nov. 25
	249	"December"	Nov. 26-Dec. 25
	250	"January"	Dec. 26-Jan.23
	251	"February"	Jan. 24-Feb. 22
	252	"March"	Feb. 23-Mar. 23
	253	"April"	Mar. 24-Apr. 21
Season 1940-41:	258	"August"	Aug. 18-Sept. 16
	259	"September"	Sept. 17-Oct. 16
	260	"October"	Oct. 17-Nov. 14
	261	"November"	Nov. 15-Dec. 13
	262	"December"	Dec. 14-Jan. 11
	263	"January"	Jan. 12-Feb. 10
	264	"February"	Feb. 11-Mar. 12
	265	"March"	Mar. 13-Apr. 10
Season 1941-42:	270	"August"	Aug. 8-Sept. 5
	271	"September"	Sept. 6-Oct. 5
	272	"October"	Oct. 6-Nov. 3
	273	"November"	Nov. 4-Dec. 3
	274	"December"	Dec. 4-Jan. 1
	275	"January"	Jan. 2-Jan. 31
	276	"February"	Feb. 1-Mar. 1
	277	"March"	Mar. 2-Mar. 31

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LENGTH COMPOSITION OF THE SAN FRANCISCO COMMERCIAL CATCH OF PILCHARD DURING THE 1938-39 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Length mm	Numbers of fish taken						
	Aug 233	Sept 234	Oct 235	Nov 236	Dec 237	Jan 238	Total
Under 154	2	16		6	1	3	28
154	2	8	2	2		1	15
156	4	13	5	4	1	1	28
158	5	21	4	9	4	4	47
160	9	45	6	13	10	7	90
162	19	42	13	24	20	14	132
164	16	53	19	30	34	19	171
166	26	100	29	50	24	24	253
168	34	121	43	44	58	50	350
170	29	116	52	76	67	67	407
172	30	116	57	74	69	96	442
174	35	103	54	91	89	96	468
176	39	134	89	119	90	113	584
178	38	139	73	113	99	114	576
180	34	134	79	132	88	110	577
182	37	142	79	136	94	109	597
184	23	121	87	117	107	98	553
186	26	118	86	129	105	97	561
188	22	152	83	130	115	97	599
190	22	139	97	128	110	95	591
192	18	179	103	117	111	90	618
194	15	179	98	127	100	87	606
196	21	194	102	138	94	75	624
198	15	161	115	115	94	64	564
200	14	176	100	120	90	60	560
202	19	179	124	126	75	65	588
204	12	252	106	118	83	54	625
206	14	226	119	137	84	42	622
208	11	244	143	125	72	50	645
210	7	184	133	134	79	52	589
212	8	220	117	125	81	49	600
214	5	189	147	127	84	45	597
216	6	155	139	125	93	54	572
218	3	145	104	123	83	45	503
220	4	118	92	83	76	44	417
222	1	89	87	86	94	47	404
224	2	81	76	71	87	52	369
226		71	55	80	77	49	332
228		50	44	62	99	59	314
230		45	31	51	99	65	291
232		21	22	36	98	67	244
234	1	34	24	37	90	72	258
236	1	29	18	41	104	70	263
238		42	22	28	103	83	278
240		26	19	32	96	82	255
242		24	15	28	106	64	237
244		18	11	19	92	60	200
246		16	14	24	104	70	228
248	1	8	11	14	104	47	185
250		13	9	11	74	47	154
252		10	7	14	69	47	147
254		5	5	7	72	39	128
256	1	10	4	9	50	39	113
258		3	2	7	54	26	92
260		5	7	5	41	24	82
262		3	2	6	39	18	68
264		8		4	15	19	46
266		3	1	3	19	19	45
268		3	2	5	17	7	34
270				1	9	3	13
272		3	1	2	3	4	13
274			1		2	1	4
276					4	2	6
278		3			1	1	5
280				1	1		2
282						1	1
284					1		1
290					1		1
Total	631	5257	3189	3951	4309	3275	20612

LENGTH COMPOSITION OF THE SAN FRANCISCO COMMERCIAL CATCH OF PILCHARD DURING THE 1939-40 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of fish taken

Length mm	Oct 247	Nov 248	Dec 249	Jan 250	Feb 251	Total
Under 154		12			1	13
154	4	8	4		1	17
156	12	48			4	64
158	16	24	4		4	48
160	16	84	26		3	129
162	37	68	11		5	121
164	24	80	37		7	148
166	69	111	18		9	207
168	77	120	29		6	232
170	102	140	26	1	11	280
172	99	84	33		6	222
174	110	143	26	1	5	285
176	114	104	44	3	6	271
178	90	112	44	6	8	260
180	53	107	48	2	6	216
182	90	123	40	1	4	258
184	65	76	62	1	6	210
186	49	76	33	3	6	167
188	90	91	55	3	9	248
190	86	100	51	5	9	251
192	86	88	66	3	10	253
194	175	171	88	5	12	451
196	159	167	135	9	12	482
198	267	219	187	10	10	693
200	199	203	249	14	12	677
202	273	227	271	13	11	795
204	374	354	260	26	14	1028
206	374	390	322	18	8	1112
208	404	342	416	16	9	1187
210	362	390	360	15	12	1139
212	318	342	399	17	8	1084
214	281	326	356	14	12	989
216	167	287	326	11	6	797
218	142	255	315	10	9	731
220	69	243	268	13	8	601
222	73	155	216	14	11	469
224	49	84	191	6	7	337
226	45	111	114	5	9	284
228	12	88	125	6	9	240
230	20	56	88	5	7	176
232	8	28	55	2	7	100
234	4	20	48	1	6	79
236	4	16	48	2	4	74
238	8	8	44	2	8	70
240		28	40	3	9	80
242	4	4	44		7	59
244		8	51	5	6	70
246		8	29	3	7	47
248	4	4	29	1	7	45
250			26	1	9	36
252		8	29	2	5	44
254		8	7		4	19
256			18	1	4	23
258		8	22	1	3	34
260		4		1	2	7
262		8	11	1	1	21
264		4		1		5
266			4			4
268			4			4
272					1	1
Total	5,084	6,373	5,852	283	402	17,994

LENGTH COMPOSITION OF THE SAN FRANCISCO COMMERCIAL CATCH OF PILCHARD DURING THE 1940-41 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of fish taken

Length mm	Aug 258	Sept 259	Oct 260	Nov 261	Dec 262	Jan 263	Total
Under 154	1	7	24	29		3	64
154		6	13	9		1	29
156		5	30	11		2	48
158		8	37	14	1	3	63
160		8	49	26		5	88
162		12	45	16		10	83
164		14	46	29		10	99
166	1	8	55	46		12	122
168	1	12	45	46		11	115
170	1	8	48	47		16	120
172		6	43	45		13	107
174		4	45	42		22	113
176		4	45	52		15	116
178		3	40	53		16	112
180		4	25	38		14	81
182	1	3	21	37		13	75
184		6	22	37		8	73
186	1	8	18	22		6	55
188	1	13	48	26		5	93
190	2	19	40	34		6	101
192	3	33	73	49		5	163
194	5	40	115	42		5	207
196	7	48	160	66	1	9	291
198	13	57	179	85		5	339
200	13	67	252	95	1	11	439
202	14	66	285	126	6	9	506
204	20	63	286	130	7	15	521
206	17	63	282	151	9	14	536
208	19	47	294	162	10	22	554
210	18	41	358	174	11	33	635
212	16	32	286	174	9	32	549
214	12	26	274	166	12	34	524
216	13	26	272	137	11	33	492
218	13	18	222	129	8	29	419
220	7	17	204	100	11	35	374
222	7	11	154	107	9	38	326
224	8	8	149	75	7	34	281
226	4	7	132	62	3	29	237
228	3	4	88	41	2	25	163
230	4	1	60	28	6	17	116
232	1	2	49	30	3	14	99
234	2	2	24	17	3	11	59
236	1	1	31	13	1	9	56
238	1	1	24	11	1	9	47
240	1		16	8		10	35
242			19	7	1	5	32
244	1		7	8	1	6	23
246	1		3	3		4	11
248			6	2		2	10
250			4	2		3	9
252	1		4	3	1	7	16
254			7	2		3	12
256			1	2		3	6
258			3	2		2	7
260			3	1		2	6
262				2			2
264				1		1	2
266			3	1			4
272						1	1
274				1			1
Total	234	839	5,068	2,874	135	717	9,867

LENGTH COMPOSITION OF THE SAN FRANCISCO COMMERCIAL CATCH OF PILCHARD DURING THE 1941-42 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of fish taken

Length mm	Aug 270	Sept 271	Oct 272	Nov 273	Total
Under 154	1	4		2	7
154		1		2	3
156	1	1			2
158	1	1			2
160		1	2		3
162	4				4
164	2	4		2	8
166		2	2	5	9
168	4	1			5
170	1	4	2	2	9
172	3	4	5	4	16
174	8	5		9	22
176	14	10	2	5	31
178	15	7	8	11	41
180	30	12	5	14	61
182	56	17	14	18	105
184	73	30	24	19	146
186	81	47	36	37	201
188	126	46	48	46	266
190	171	72	53	55	351
192	226	96	110	88	520
194	278	138	136	76	628
196	288	184	173	104	749
198	298	238	195	182	913
200	322	291	254	206	1,073
202	288	306	302	245	1,141
204	235	366	274	246	1,121
206	226	320	280	236	1,062
208	144	311	316	248	1,019
210	102	238	264	266	870
212	72	227	216	250	765
214	69	187	197	203	656
216	55	112	200	215	582
218	30	105	170	198	503
220	20	64	122	146	352
222	12	63	144	164	383
224	8	34	82	120	244
226	7	15	66	111	199
228	3	9	48	55	115
230	3	9	24	37	73
232	1	8	14	28	51
234		2	15	16	33
236		2	12	11	25
238		1	2	7	10
240		3	2	2	7
242		2	2		4
244				4	4
246			2	2	4
248				2	2
250		1			1
252		1	2		3
254				4	4
256				2	2
258				2	2
Total	3,278	3,602	3,825	3,707	14,412

LENGTH COMPOSITION OF THE SAN FRANCISCO COMMERCIAL CATCH OF PILCHARD DURING THE 1942-43 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of fish taken

Length mm	Aug 282	Sept 283	Oct 284	Nov 285	Dec 286	Jan 287	Total
Under 154				2			2
154							
158						1	1
160				1			1
162				1	1		2
168						1	1
174			1				1
176						1	1
178				1			1
182		1				1	2
184		1					1
186	1			1			2
188	1	3	1	1			6
190	3	3	3	1		1	11
192	6	4	1	2	1		14
194	6	5	3	2	2	1	19
196	7	14	5	5	2	4	37
198	13	15	8	5	2	4	47
200	17	26	9	9	4	10	75
202	26	34	13	14	5	8	100
204	37	57	23	19	9	10	155
206	67	84	42	32	10	23	258
208	88	106	65	42	18	27	346
210	110	132	76	46	27	40	431
212	149	158	88	71	29	43	538
214	137	166	107	64	37	53	564
216	168	178	118	99	55	65	683
218	151	177	116	90	54	53	641
220	148	172	104	76	51	58	609
222	147	145	93	74	62	63	584
224	90	111	76	62	60	42	441
226	84	106	60	53	52	44	399
228	65	89	51	50	39	46	340
230	63	53	42	39	30	33	260
232	54	50	33	26	28	19	210
234	32	19	16	16	28	15	126
236	29	25	12	25	16	15	122
238	15	11	6	9	16	8	65
240	13	9	6	8	11	3	50
242	9	7	4	6	11	7	44
244	3	5	3	5	3	2	21
246	6	2	1	4	6	1	20
248	3	2	3	3	3	1	15
250	3	1	1	3	1	1	10
252	2		1	1	1		5
254			2		1		3
256				2	1		3
258				1	1		2
260	1			1			2
262	1			1			2
268				1		1	2
270		1					1
Total	1,755	1,972	1,193	974	677	705	7,276

LENGTH COMPOSITION OF THE SAN FRANCISCO COMMERCIAL CATCH OF PILCHARD DURING THE 1943-44 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of fish taken

Length mm	Jul 294	Aug 295	Sept 296	Oct 297	Nov 298	Dec 299	Jan 300	Total
Under 154	1	5	2					8
154		2						2
156	1	2						3
158		2						2
160	1	2				1		4
162		3				2		5
164		3			4	1		8
166		1			5	1		7
168		1	1		11	2		15
170		1	1		6	1		9
172					9	2		11
174					4	2		6
176			1		9	1		11
178					11	2	1	14
180		1	1		9	1		12
182			1		4			5
184					6			6
186					3			3
188			1		2			3
190								
192			1					1
194		1	2					3
196	1		3		1		1	6
198		2	1	1				4
200		2	5		2	1	1	11
202	1	1	8	1			1	12
204	3	6	13	2	1	2	1	28
206	4	5	16	2	2		1	30
208	4	9	26	2	5	1		47
210	8	15	33	1	5	2		64
212	14	29	60	2	5	1	2	113
214	28	41	84	4	11	2	4	174
216	37	82	151	6	13	5	2	296
218	31	121	166	9	31	5	11	374
220	34	168	243	14	38	8	14	519
222	49	198	277	15	38	6	19	602
224	41	216	304	15	38	8	32	654
226	33	242	298	16	46	6	39	680
228	32	218	243	19	53	8	59	632
230	26	227	216	14	44	6	52	585
232	23	172	150	21	45	8	67	486
234	10	122	126	13	32	8	78	389
236	9	97	83	6	29	10	65	299
238	5	82	47	6	26	5	75	246
240	4	73	43	5	18	6	68	217
242	2	54	23	4	15	4	58	160
244	2	32	21	3	5	3	45	111
246	1	27	11	2	7	2	37	87
248	2	14	9	2	4	3	31	65
250		15	4		2	2	19	42
252	1	8	2		2	2	22	37
254		5	1	1	1	1	6	15
256		3	3				5	11
258		1			1	1	4	7
260		1	1		1		3	6
262		1	1				4	6
264		1					3	4
266		1					1	2
268							1	1
272							1	1
Total	408	2315	2683	186	604	132	833	7161

LENGTH COMPOSITION OF THE SAN FRANCISCO COMMERCIAL CATCH OF PILCHARD DURING THE 1944-45 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of fish taken

Length mm	Aug 307	Sept 308	Oct 309	Nov 310	Dec 311	Jan 312	Feb 313	Total
162						1		1
164						1		1
166						1		1
168						3		3
170						6	1	7
172						5		5
174						6	1	7
176						6	2	8
178						4	2	6
180						5	1	6
182		1	1			8	1	11
184						9	2	11
186		1				8	5	14
188		2	1			6	1	10
190		1	2			6	3	12
192		1	4	1		5	3	14
194		2	5	1		7	1	16
196		5	7			5	1	18
198		7	11	1		4	1	24
200		10	13	1	3	4		31
202	2	8	19	7	2	8	1	47
204	4	14	21	2	6	6	2	55
206	4	16	26	7	2	6	1	62
208	7	20	27	11	5	6	2	78
210	6	30	30	11	7	8		92
212	12	31	31	13	8	9	1	105
214	10	30	32	10	8	6		96
216	8	32	32	16	5	4	1	98
218	9	45	29	16	7	6	1	113
220	14	28	34	20	3	3		102
222	13	28	35	15	5	4	1	101
224	22	31	32	22	10	8	1	126
226	26	33	40	28	19	7	1	154
228	38	47	46	31	14	10	1	187
230	59	52	50	45	30	14	2	252
232	59	70	73	50	33	16	3	304
234	81	87	76	70	58	27	4	403
236	84	82	117	61	84	25	6	459
238	85	97	122	70	75	36	7	492
240	81	98	121	88	102	32	5	527
242	83	95	134	78	103	37	8	538
244	75	88	117	82	108	38	6	514
246	63	78	99	79	78	36	5	438
248	47	63	95	57	70	35	4	371
250	36	42	76	46	71	22	6	299
252	34	33	54	36	45	18	3	223
254	20	23	37	27	24	17	2	150
256	11	21	30	13	34	11	1	121
258	9	12	12	16	16	6	1	72
260	5	9	15	4	15	5	1	54
262	2	3	8	1	7	3		24
264	3	5	7	5	4	1	1	26
266	1	1	3	1	1		1	8
268		1	1	3	2	1		8
270		1	1		2			4
272		1	1					2
274		1	1					2
276				1				1
278					1			1
Total	1013	1386	1728	1046	1067	571	104	6915

LENGTH COMPOSITION OF THE SAN FRANCISCO COMMERCIAL CATCH OF PILCHARD DURING THE 1945-46 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of fish taken

Length mm	Aug 319	Sept 320	Oct 321	Nov 322	Dec 323	Jan 324	Feb 325	Total
Under 152		2	2					4
156		6	2		No Samples	No Samples		8
160		2	2					4
164		4						4
168		2						2
170		2						2
172			2					2
174			2					2
176				1				1
178			4					4
180		4	4					8
182		2		1				3
186		2	11	2				15
188		8	4					12
190		6	4	2				12
192		18	7	1				26
194		16	5	3				24
196	6	14	7	1				28
198	3	31	9	3				46
200	8	33	18	1				60
202	8	59	14	3				84
204	28	70	23	7				128
206	22	72	30	5				129
208	31	68	46	10				155
210	47	86	65	12				210
212	53	88	65	20			1	227
214	61	86	102	23			1	273
216	59	107	92	23			1	282
218	45	90	102	21			1	259
220	62	107	109	26			1	305
222	36	76	86	23	No Samples	No Samples	1	222
224	14	72	99	18			1	204
226	31	55	76	17			1	180
228	39	43	65	17			1	165
230	8	41	55	16			1	121
232	20	31	51	12			1	115
234	20	14	34	10			1	79
236	8	25	44	8			1	86
238	8	16	49	8			2	83
240	17	37	48	7			1	110
242	11	31	44	7			2	95
244	8	29	53	7			1	98
246	3	39	49	10			2	103
248	14	35	44	8			1	102
250		29	48	9			1	87
252	8	33	51	10			1	103
254	3	29	28	6			1	67
256	6	6	28	7			1	48
258	6	4	30	4			1	45
260		2	16	3			1	22
262		4	4	3				11
264		2	7	1				10
266		2	4	1				7
268				1				1
270			2	1				3
272			2	1				3
278				1				1
Total	693	1640	1748	381			28	4490

LENGTH COMPOSITION OF THE SAN FRANCISCO COMMERCIAL CATCH OF PILCHARD DURING THE 1946-47 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of fish taken

Length mm	Aug 332	Dec 336	Jan 337	Total
156	1			1
158	1			1
160	2			2
162	5	1		6
164	3			3
166	4	1		5
168	4			4
170	4			4
172	2			2
174	4			4
176	3			3
178				
180	2	1		3
184	1			1
194	1			1
198		1		1
200		2		2
202		1		1
204		1		1
206				
208		2		2
210		2		2
212	1	3		4
214		2		2
216		1		1
218		3		3
220		1		1
222	1	1		2
224		1		1
226		1		1
228		2		2
232		2	1	3
234		6		6
236		7	1	8
238		9	1	10
240		5		5
242		8	1	9
244		5	1	6
246		2	1	3
248		3	1	4
250		3	1	4
252		8	1	9
254		3	1	4
256		7		7
258		5	1	6
260		5		5
262		2		2
264		2		2
266		1		1
Total	39	110	11	160

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1919-20 SEASON, GIVEN BY QUARTERLY PERIODS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of fish taken

Length mm	Oct-Dec	Jan-Mar	Total	Length mm	Oct-Dec	Jan-Mar	Total
Under 154	28	1	29	200	40	10	50
154	2		2	222	36	11	47
156	2	1	3	224	33	11	44
158	2		2	226	28	10	38
160	1		1	228	24	11	35
				230	19	12	31
164	1		1	232	19	11	30
				234	23	13	36
170	1		1	236	18	12	30
				238	12	14	26
174	2		2	240	12	15	27
176	1		1	242	17	16	33
				244	17	17	34
180	3		3	246	14	16	30
182	3	1	4	248	8	19	27
184	8	1	9	250	9	20	29
186	10	2	12	252	7	18	25
188	18	5	23	254	6	15	21
190	28	9	37	256	4	13	17
192	33	18	51	258	6	15	21
194	57	27	84	260	5	14	19
196	66	36	102	262	2	10	12
198	72	39	111	264	4	7	11
200	74	43	117	266	3	6	9
202	78	39	117	268		7	7
204	69	40	109	270	1	4	5
206	68	38	106	272		4	4
208	54	28	82	274	1	2	3
210	58	21	79	276		2	2
212	49	19	68	278		1	1
214	47	18	65	280		2	2
216	46	15	61				
218	50	13	63	Total	1,299	752	2,051

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1920-21 SEASON, GIVEN BY QUARTERLY PERIODS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Length mm.	Numbers of Fish Taken			
	July-Sept.	Oct.-Dec.	Jan.-Mar.	Total
Under 154	4	21		25
154	2	1		3
156		1		1
158		1		1
160		1		1
162	2	1		3
164				
166	2	1		3
168		1		1
170	2	1		3
172	2	1		3
174	4	3		7
176		4		4
178	12	4		16
180	10	4		14
182	16	8		24
184	14	6		20
186	16	6		22
188	26	7		33
190	16	7		23
192	28	10		38
194	36	13		49
196	52	18		70
198	58	38		96
200	92	60		152
202	94	65	2	161
204	142	89	2	233
206	134	111	4	249
208	154	120	4	278
210	120	102	5	227
212	80	81	5	166
214	64	63	5	132
216	34	43	4	81
218	13	29	4	46
220	28	22	2	52
222	2	13	2	17
224	6	11	2	19
226		6	1	7
228	2	3	1	6
230		3	1	4
232		3	1	4
234		1	1	2
236		2		2
238		1	1	2
240	2		1	3
242		1		1
244			1	1
Total	1,269	987	49	2,305

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1921-22 SEASON, GIVEN BY QUARTERLY PERIODS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Jul-Sept	Oct-Dec	Jan-Mar	Total
Under 154	12	2		14
154	5	1		6
156	4	2		6
158	7	1		8
160	6	2	1	9
162	8	3		11
164	9	2		11
166	10	4		14
168	9	6		15
170	13	4	1	18
172	11	6		17
174	14	9		23
176	19	8		27
178	23	10		33
180	24	13		37
182	33	16		49
184	35	22	1	58
186	37	22		59
188	43	26		69
190	40	27		67
192	35	30		65
194	42	34		76
196	41	44	1	86
198	40	43	1	84
200	43	40	1	84
202	31	42	1	74
204	35	30	1	66
206	30	29	1	60
208	26	27	2	55
210	22	31	3	56
212	16	30	5	51
214	16	31	6	53
216	14	28	6	48
218	11	28	9	48
220	7	19	10	36
222	5	13	8	26
224	3	9	6	18
226	2	5	5	12
228	1	4	6	11
230	1	2	5	8
232		1	5	6
234		1	5	6
236			5	5
238		1	5	6
240	1	1	5	7
242		1	5	6
244		1	6	7
246			5	5
248			5	5
250			4	4
252			4	4
254			3	3
256			3	3
258			2	2
260			2	2
262			2	2
264			2	2
266			1	1
268			1	1
270			1	1
272			1	1
274				
276			1	1
Total	784	711	153	1,648

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1922-23 SEASON, GIVEN BY QUARTERLY PERIODS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Length mm	Numbers of Fish Taken			
	Jul-Sept	Oct-Dec	Jan-Mar	Total
Under 154	17	6	1	24
154	1	1		2
156	1	1		2
158	1	1		2
160		1		1
162	1	2		3
164	1	2		3
166	2	2	1	5
168	3	3		6
170	3	3	1	7
172	5	5	1	11
174	7	9	2	18
176	11	14	2	27
178	16	21	3	40
180	16	26	2	44
182	26	33	2	61
184	32	42	2	76
186	42	49	3	94
188	54	59	4	117
190	56	57	3	116
192	55	70	3	128
194	66	78	4	148
196	52	68	4	124
198	55	61	6	122
200	43	64	7	114
202	35	51	7	93
204	27	50	8	85
206	26	43	8	77
208	20	32	10	62
210	18	30	11	59
212	16	22	14	52
214	12	21	14	47
216	14	20	22	56
218	12	20	22	54
220	10	17	25	52
222	8	20	30	58
224	7	13	22	42
226	4	15	22	41
228	3	12	28	43
230	1	9	21	31
232	1	8	20	29
234	1	7	21	29
236		5	16	21
238		4	16	20
240		2	17	19
242		2	15	17
244		2	15	17
246		2	15	17
248		1	17	18
250		1	12	13
252		1	12	13
254		1	11	12
256			10	10
258		1	10	11
260		1	6	7
262		1	7	8
264			7	7
266			5	5
268			3	3
270			2	2
272			2	2
274			2	2
276			2	2
278			1	1
280			1	1
282			1	1
Total	781	1,092	561	2,434

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1923-24 SEASON, GIVEN BY QUARTERLY PERIODS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Jul-Sept	Oct-Dec	Jan-Mar	Total
Under 154	191	3	5	199
154	36	1	1	38
156	32	1	2	35
158	32	2	1	35
160	23	1		24
162	23	1	1	25
164	20		2	22
166	17	1	1	19
168	13	1	2	16
170	17	1	3	21
172	19	1	1	21
174	19	1	2	22
176	20	1	1	22
178	25	1	2	28
180	18	2	2	22
182	17	2	3	22
184	21	2	2	25
186	22	4	1	27
188	20	5	2	27
190	26	3	2	31
192	28	5	2	35
194	23	9	1	33
196	19	12	1	32
198	25	19	2	46
200	23	26	1	50
202	22	42	2	66
204	26	61	2	89
206	41	88	5	134
208	50	101	11	162
210	53	128	12	193
212	64	122	14	200
214	61	118	22	201
216	64	115	23	202
218	57	92	29	178
220	47	81	34	162
222	43	58	37	138
224	35	44	40	119
226	28	39	41	108
228	23	37	43	103
230	16	21	35	72
232	11	19	36	66
234	9	18	35	62
236	6	16	31	53
238	4	11	26	41
240	2	8	24	34
242	2	7	18	27
244	2	7	22	31
246	2	6	20	28
248	2	6	21	29
250	1	4	15	20
252		4	18	22
254	1	4	16	21
256		1	18	19
258		4	15	19
260		2	10	12
262		1	7	8
264		1	9	10
266		1	5	6
268		1	4	5
270			4	4
272			4	4
274			1	1
276			1	1
278			1	1
280			1	1
282			1	1
284				
286				
288			1	1
Over 288	____	____	1	1
Total	1,401	1,373	758	3,532

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1924-25 SEASON, GIVEN BY QUARTERLY PERIOD

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Length mm	Numbers of Fish Taken			
	Jul-Sept	Oct-Dec	Jan-Mar	Total
Under 154	14	3		17
154	7	2		9
156	9	2		11
158	10	2		12
160	13	5		18
162	8	4		12
164	7	3		10
166	9	4		13
168	8	2		10
170	7	1		8
172	6	3		9
174	6	2	1	9
176	4	2	1	7
178	5	1	1	7
180	3	1	3	7
182	6		1	7
184	6		2	8
186	4	1		5
188	4		1	5
190	4	2		6
192	3			3
194	2	1		3
196	2	1		3
198	2	3		5
200	5	1		6
202	9	3	1	13
204	19	7	1	27
206	43	16	1	60
208	65	41	3	109
210	121	77	7	205
212	154	134	16	304
214	188	162	29	379
216	206	222	39	467
218	170	213	53	436
220	121	194	67	382
222	97	162	63	322
224	77	116	76	269
226	46	81	80	207
228	35	59	76	170
230	22	47	74	143
232	19	31	61	111
234	13	22	58	93
236	8	14	61	83
238	4	14	48	66
240	5	13	50	68
242	2	11	39	52
244	2	9	39	50
246		8	33	41
248	1	10	29	40
250		7	30	37
252		9	20	29
254		7	23	30
256		3	23	26
258		5	15	20
260		6	20	26
262		5	14	19
264		5	10	15
266		3	14	17
268		3	9	12
270		1	7	8
272		1	5	6
274		1	5	6
276		1	5	6
278		1	2	3
280		1	2	3
282			2	2
284			1	1
286			1	1
Over 288	____	____	1	1
Total	1,581	1,771	1,223	4,575

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1925-26 SEASON, GIVEN BY QUARTERLY PERIODS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Jul-Sept	Oct-Dec	Jan-Mar	Total
Under 154				
154				
156				
160				
162			1	1
164			1	1
166	1	1	1	3
168		1	2	3
170	1	1	4	6
172	1	1	10	12
174	3	1	9	13
176	3	2	15	20
178	9	3	24	36
180	9	3	17	29
182	13	3	25	41
184	17	2	20	39
186	20	3	15	38
188	25	3	16	44
190	22	2	13	37
192	17	2	17	36
194	19	3	14	36
196	30	4	18	52
198	22	4	11	37
200	41	6	12	59
202	41	5	10	56
204	80	8	9	97
206	82	16	15	113
208	99	27	12	138
210	109	31	18	158
212	100	38	19	157
214	129	48	36	213
216	128	66	59	253
218	165	86	63	314
220	140	78	91	309
222	127	76	104	307
224	144	70	85	299
226	109	64	98	271
228	92	48	93	233
230	74	35	106	215
232	44	25	78	147
234	29	17	79	125
236	31	15	81	127
238	17	8	74	99
240	22	8	65	95
242	10	4	59	73
244	8	4	50	62
246	7	2	38	47
248	5	3	39	47
250	2	2	33	37
252	5	1	30	36
254	4	1	20	25
256	5	1	24	30
258	1	1	24	26
260	4	1	14	19
262	3		10	13
264	1		11	12
266			7	7
268	1		5	6
270	1		8	9
272	1		2	3
274			4	4
276			3	3
278	1			1
Total	2,074	834	1,821	4,729

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1926-27 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
Under 154	12	2	28	11	1					54
156			5							5
158			8	2						10
160			6	2	1					9
162			5	2	1					8
164			1	1	1					3
166			2							2
168			2		1					3
170			1							1
172			1							1
174			1		1				1	3
176				1	2	1			1	5
178					2					2
180			1	2	1					4
182		1	1		3					5
184		1			1	1			2	5
186		1	3	1	2	2		1	2	12
188		1	2	3	3	2	1		3	15
190		1	2		1	1			2	7
192		2	6	2	1	2	2	1	4	20
194		2	8	4	3	2	1		6	26
196		4	6	14	6	2	1	3	3	39
198		6	19	10	3	3	1	2	6	50
200		7	23	23	9	5	1	1	10	79
202		10	45	51	10	7	4	1	8	136
204		11	65	63	18	8	5	2	7	179
206		16	87	106	31	14	8	11	7	280
208		20	123	105	40	19	10	8	6	331
210		18	137	118	67	21	14	8	6	389
212		21	127	147	59	20	13	14	7	408
214		17	146	133	67	26	9	12	2	412
216		14	96	98	64	23	33	13	3	344
218		14	63	87	59	26	35	17	3	304
220		8	52	62	51	17	39	11	2	242
222		9	43	47	39	18	48	10	2	216
224		9	28	28	37	16	53	22		193
226		7	29	31	36	15	56	25	1	200
228		7	22	20	27	17	63	19	3	178
230		3	14	14	15	10	78	21	4	159
232		4	12	12	14	11	76	28	6	163
234		3	8	7	9	8	68	25	4	132
236		3	2	3	8	6	59	33	4	118
238		1	2	1	1	6	50	26	8	95
240		1	1	1	1	3	49	28	8	92
242			2	1		3	32	26	6	70
244				1	1	1	22	24	6	55
246					1	1	27	24	11	64
248					1		16	16	4	37
250						1	12	17	8	38
252							11	11	4	26
254							8	10	7	25
256							5	11	2	18
258							4	9	4	17
260							5	5		10
262							2	6		8
264							2	3	1	6
266							1	3	1	5
268							1	3		4
270							1	1		2
272							1	1		2
274								1		1
276								1		1
280							1			1
284								1		1
Total	12	224	1235	1214	699	318	928	515	185	5330

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1927-28 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
Under 154					1					1
158					1	3				4
160					1	5	1			7
162					1	8				9
164					3	12				15
166					3	12	1			16
168					7	16				23
170					5	19				24
172					7	20	1			28
174			1		6	21				28
176			1		8	24	1			34
178					7	30	2			39
180			1		4	27	5			37
182			2	1	5	24	8			40
184			1		6	26	5			38
186	1		1		3	22	17	3		47
188	1	1		1	4	35	14			56
190	2				3	23	18	3	1	50
192		1	4		3	13	14	5	4	44
194		2	2	1	1	12	12	3	2	35
196	1		3	1		11	12	13	1	42
198	1	2	2		3	11	9	7	1	36
200		2	3	1	1	10	8	3	1	29
202		4	2		1	8	6	5	3	29
204		4	3	1	1	6	2	12		29
206	2	8	5	1	1	9	3	9	1	39
208	2	13	13	5		12	6	13	1	65
210	3	20	18	6	1	9	7	12		76
212	15	24	39	6	1	4	12	16	1	118
214	9	45	80	10	2	16	11	17	1	191
216	15	56	125	23	2	18	17	26	2	284
218	29	73	171	53	5	22	14	43	3	413
220	40	67	168	35	1	29	29	57	4	430
222	32	73	185	52	2	19	29	70	5	467
224	45	67	168	48	1	20	23	74	8	454
226	42	63	140	54	1	17	34	93	6	450
228	44	51	114	45	2	18	25	80	11	390
230	36	36	84	28	1	18	33	99	9	344
232	37	20	48	19		7	27	88	10	256
234	27	23	58	10	1	9	27	84	10	249
236	27	14	29	12		9	36	82	7	216
238	29	10	13	7		5	29	104	12	209
240	23	12	15	5		3	34	88	10	190
242	21	5	6	1		1	17	71	8	130
244	15	9	7	1		1	18	74	9	134
246	13	4	5	2		1	22	80	6	133
248	7	2	2	2			9	41	4	67
250	8	2					8	47	7	72
252	3			1			6	38	4	52
254	6	2	2	1			5	26	3	45
256	3		2	2			6	26	3	42
258	2	1					2	16	3	24
260	3	1					6	13	3	26
262	2	1					2	3	1	9
264	1	2					2	8	1	14
266								11		11
268	1						1	7	1	10
270								5		5
272										
274			1							1
276								1		1
278								1		1
280								1		1
Total	548	720	1524	435	106	645	636	1578	167	6359

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1928–29 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
Under 154	1								1
158	1								1
164	1								1
166	1								1
168	1								1
170	1								1
172	1		1						2
174	4								4
176	1		2		1				4
178	1		1		1				3
180	2		1						3
182			1		1				2
184	1		2						3
186	3		2						5
188	1		4		1			1	7
190	4	1	5						10
192	5	1	4	2	1				13
194	3		5	1	2	1			12
196	7	3	18	2					30
198	2	7	12	5	1	1			28
200	4	7	25	4	4	2			46
202	3	8	39	9	4	2	2		67
204	7	10	40	7	6		3		73
206	9	13	46	10	5	4	4	2	93
208	20	22	45	12	12	5	3	4	123
210	19	24	50	7	10	8	5		123
212	41	47	52	12	8	6	3	2	171
214	31	41	50	16	10	8	8	5	169
216	53	69	50	15	22	11	7	4	231
218	77	105	58	19	25	24	5	6	319
220	88	132	70	28	25	23	9	9	384
222	92	162	80	20	33	35	24	11	457
224	111	141	82	26	28	45	33	7	473
226	114	175	101	34	44	65	54	25	612
228	143	173	104	27	47	99	66	33	692
230	119	154	102	21	39	89	68	22	614
232	96	115	93	18	27	79	79	41	548
234	79	100	54	14	24	83	68	48	470
236	84	61	53	11	18	67	101	43	438
238	49	45	32	7	14	68	89	40	344
240	45	31	20	2	8	48	85	61	300
242	36	6	9	3	9	44	72	37	216
244	16	11	4	1	5	42	68	43	190
246	16	11	3	1	4	47	59	44	185
248	11	8	4		1	27	53	51	155
250	6	3			3	19	37	30	98
252	9	2			1	17	36	23	88
254	2		1			7	26	12	48
256	2	2				5	27	24	60
258	1	2	2			2	16	18	41
260		1				3	6	17	27
262		1					5	6	12
264					1	1	7	6	15
266	1	2	1		1	2	6	2	15
268	1					2	1	8	12
270	1						2	4	7
272	1					2	1	3	7
274					1	1	5	1	8
476								2	2
278								1	1
280									
282						1			1
284							1		1
286	1								1
Total	1429	1696	1328	334	447	995	1144	696	8069

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1929-30 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Total
Under 154	1		6	4				11
156			1					1
158				1				1
160						2		2
164						1		1
170						1		1
172				1				1
176						6		6
178			1		1	8		10
180	1		2	1	2	8		14
182	5		1		3	22		31
184	9	1	1		10	35		56
186	31	3	6	4	11	33		88
188	52	3	5	1	16	30		107
190	67	12	6		22	40		147
192	99	19	14	7	30	21		190
194	121	31	12	11	29	12	2	218
196	136	50	28	21	38	18		291
198	146	48	40	14	51	8		307
200	130	60	46	33	43	12		324
202	104	66	68	43	49	13	2	345
204	107	83	80	60	44	9		383
206	107	93	105	60	54	17		436
208	108	73	95	67	53	9	3	408
210	100	70	104	85	57	18	2	436
212	83	79	145	108	61	21	5	502
214	68	65	141	109	63	32	8	486
216	57	70	187	129	60	27	6	536
218	59	102	181	109	77	44	11	583
220	67	96	171	119	77	37	14	581
222	55	64	181	115	68	40	21	544
224	33	69	151	114	87	47	19	520
226	33	54	130	98	58	51	24	448
228	43	34	111	81	49	70	43	431
230	27	41	103	57	77	63	46	414
232	21	25	95	65	75	104	46	431
234	21	29	54	68	57	92	88	409
236	17	28	54	36	58	97	103	393
238	27	19	47	44	55	136	95	423
240	4	19	25	18	52	98	96	312
242	17	9	31	31	29	77	103	297
244	9	17	11	23	26	90	90	266
246	5	7	7	16	19	78	55	187
248	7	6	7	4	7	61	63	155
250	5	4	5	4	2	41	71	132
252	7	2	6	9	4	40	44	112
254	1	1	4	3	5	37	43	94
256	5	2	1		1	21	19	49
258	5	3			2	14	17	41
260			1		2	8	19	30
262		1				6	9	16
264		1				4	2	7
266						4	5	9
268					1	2	6	9
270			1			1	2	4
272		1				1	2	4
274						2	2	4
278						1		1
282							2	2
Total	2000	1460	2471	1773	1585	1770	1188	12247

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1938-39 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Jul 232	Aug 233	Sept 234	Oct 235	Nov 236	Dec 237	Jan 238	Total
Under 152		12	4		2	4	2	24
152		14	4		2			20
154		5	7	2	8			22
156		19	5	7	4	4		39
158		26	18	7	23	13		87
160		47	32	14	32	15	2	142
162	1	55	48	18	66	17	2	207
164	1	55	84	30	57	33	8	268
166	1	81	108	57	105	52	16	420
168	1	76	183	66	150	85	27	588
170	1	114	144	95	160	120	33	667
172	1	73	189	109	152	133	42	699
174	1	78	216	147	156	127	31	756
176	1	109	206	147	164	166	27	820
178	1	114	185	191	175	138	52	856
180	1	107	173	175	181	164	60	861
182	1	81	120	161	164	168	47	742
184		59	136	173	131	174	53	726
186		83	120	172	150	142	64	731
188		99	113	163	177	135	47	734
190		105	97	134	133	124	61	654
192		121	97	109	111	116	42	596
194		106	92	132	89	118	45	582
196	1	154	97	116	82	118	33	601
198	1	168	84	75	93	85	34	540
200	1	147	68	97	102	65	34	514
202	1	173	83	90	86	63	34	530
204	2	152	77	93	76	65	30	495
206	2	123	77	90	72	96	47	507
208	1	127	68	66	86	55	31	434
210	1	111	61	80	57	87	34	431
212		76	29	63	63	59	36	326
214		42	20	38	36	57	25	218
216		43	25	47	34	63	34	246
218		28	22	27	29	24	41	171
220		9	16	30	32	41	42	170
222		9	2	29	21	41	45	147
224		10	9	14	13	24	41	111
226		5	5	14	10	33	39	106
228		2		5	15	26	53	101
230		3	4	5	6	28	61	107
232		3	5	7	6	24	67	112
234				5	2	22	78	107
236		2		2	2	13	77	96
238			2	7		20	85	114
240			2	2		20	72	96
242			2	7	4	15	78	106
244				2		9	58	69
246				2	2	13	80	97
248			2		2	7	74	85
250						11	61	72
252					2	9	50	61
254				2		7	38	47
256						2	36	38
258			2			7	38	47
260		2				7	20	29
262						2	19	21
264						4	22	26
266						2	13	15
268							8	8
270							9	9
272							8	8
274							2	2
278							2	2
Total	21	3028	3143	3124	3325	3272	2350	18263

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1939-40 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Sept 246	Oct 247	Nov 248	Dec 249	Jan 250	Feb 251	Total
Under 154		3	32				35
154	70	6	4	3			83
156	15	9	30	5			59
158	25	16	21	13	2		77
160	22	44	54	13			133
162	41	60	58	28			187
164	37	54	82	31	8		212
166	52	66	118	28	8		272
168	46	107	129	28	9		319
170	52	110	107	36	11	2	318
172	43	145	131	28	11	2	360
174	50	145	118	20	5		338
176	63	186	107	15	11	5	387
178	50	170	120	26	11	7	384
180	66	186	109	31	8	3	403
182	38	173	86	31	6	7	341
184	56	170	92	38	17	5	378
186	87	142	92	41	20	24	406
188	71	170	88	41	21	40	431
190	74	161	120	33	23	41	452
192	90	294	107	49	40	75	655
194	129	271	112	49	44	94	699
196	140	246	137	87	46	99	755
198	161	286	120	107	68	113	855
200	175	300	182	120	76	105	958
202	144	338	232	232	82	89	1117
204	131	334	260	245	96	72	1138
206	119	328	262	306	121	86	1222
208	122	274	254	296	99	84	1129
210	77	205	214	306	124	75	1001
212	54	183	202	337	115	51	942
214	43	110	133	265	141	67	759
216	28	91	131	232	140	65	687
218	10	63	77	201	117	65	533
220	15	28	68	147	99	57	414
222	13	9	36	181	84	41	364
224	6	19	36	122	55	38	276
226	4	3	15	74	44	27	167
228	2		9	64	38	15	128
230	3	6	6	49	36	38	138
232			2	28	35	21	86
234		3	2	33	17	15	70
236	2		2	25	14	15	58
238	3		2	25	18	26	74
240				23	20	21	64
242				20	17	17	54
244				13	18	10	41
246	2			15	15	17	49
248				5	8	10	23
250				8	8	15	31
252				15	11	17	43
254				10	8	7	25
256				13	5	7	25
258				5	5	7	17
260				8	6	7	21
262					6	3	9
264					3	2	5
266							
268						2	2
270				5			5
272	2					2	4
274					2		2
276							
278					2		2
Total	2433	5514	4299	4209	2054	1713	20222

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1940-41 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Sept 259	Oct 260	Nov 261	Dec 262	Jan 263	Feb 264	Total
Under 152	4	22			6		32
152	6	19					25
154		25		1	1		27
156	4	55	4	2	3		68
158	6	60	11		4		81
160	2	63	22		3		90
162	12	104	26	2	14		158
164	16	104	26	3	3		152
166	22	148	62	1	9		242
168	18	107	48	2	17		192
170	24	82	40	4	21		171
172	26	104	55	3	11		199
174	12	82	48	1	18		161
176	24	35	29	2	21		111
178	20	60	55	1	24		160
180	18	47	48	2	27		142
182	20	41	55		30		146
184	8	38	48	2	23		119
186	24	50	48	1	14		137
188	42	69	37	4	21		173
190	32	92	66	2	30		222
192	62	145	91	4	16	1	319
194	94	183	128	5	30		440
196	115	218	139	8	37		517
198	108	237	150	14	57		566
200	123	290	212	12	40		677
202	116	328	234	20	72	1	771
204	119	318	234	22	114	1	808
206	68	255	296	25	95	2	741
208	78	290	285	33	139	1	826
210	44	280	314	37	122	5	802
212	54	284	326	31	168	5	868
214	46	237	201	29	152	6	671
216	30	234	278	37	138	5	722
218	34	167	168	23	139	7	538
220	24	142	194	16	112	6	494
222	18	158	132	23	95	5	431
224	12	92	121	22	65	5	317
226	2	69	77	6	50	6	210
228	6	63	66	10	45	5	195
230		31	37	3	27	5	103
232	4	28	22	2	23	3	82
234	2	6	18	4	13	2	45
236		35	37	2	6	2	82
238		9	18	1	16	2	46
240			7	2	16	1	26
242			11	1	6	3	21
244			7		11	3	21
246				1	6	2	9
248		3	7		4		14
250			18		7	2	27
252				1	1		2
254		3		2	3	2	10
256			4	1	1		6
258			7				7
260				2	1		3
262				1	3		4
264			7				7
268		3					3
Total	1499	5515	4574	433	2130	88	14239

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1941-42 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug 270	Sept 271	Oct 272	Nov 273	Dec 274	Jan 275	Feb 276	Total
Under 152	11	14	6	1				32
152	4	8	1	1		2		16
154	11	2	7		1	2		23
156	10	5	6	8		1		30
158	17	8	4	6		2		37
160	33	14	7	7	1	3		65
162	32	19	8	22	2	9		92
164	39	17	25	18	2	10		111
166	56	36	15	13	3	12		135
168	83	44	32	18	2	16	1	196
170	108	55	46	29	1	27	3	269
172	134	52	57	34	4	29	2	312
174	118	61	77	39	5	37	1	338
176	128	65	101	55	6	39	3	397
178	142	71	114	69	11	47	5	459
180	162	111	137	92	9	45	6	562
182	175	117	163	102	19	48	4	628
184	171	142	183	114	19	56	5	690
186	220	189	220	147	20	40	5	841
188	215	211	226	172	25	59	7	915
190	244	226	337	208	24	69	3	1111
192	197	258	374	284	20	77	5	1215
194	206	333	430	332	27	88	7	1423
196	208	384	455	398	34	95	5	1579
198	186	428	500	481	27	121	10	1753
200	194	439	477	522	39	104	7	1782
202	184	420	480	508	36	102	10	1740
204	188	382	369	456	29	108	16	1548
206	146	296	324	370	27	72	10	1245
208	108	254	224	334	25	73	15	1033
210	83	184	210	241	22	62	14	816
212	69	130	95	190	19	46	11	560
214	42	69	91	171	28	50	12	463
216	41	51	81	97	12	29	14	325
218	28	28	57	84	11	25	16	249
220	19	26	47	60	7	29	10	198
222	5	8	28	34	5	19	14	113
224	5	8	22	32	3	12	14	96
226	6	7	18	20	2	6	18	77
228	3	3	8	14	2	10	10	50
230	3	2	4	13		5	8	35
232		1	1	6		7	4	19
234	1	1	3	1	1		6	13
236			1	1			5	7
238		2	1	1	1		3	8
240				1			1	2
242				1		1		2
244							1	1
246					1		1	2
248							1	1
250							1	1
252								
254							1	1
256							1	1
258								
260							1	1
262							1	1
264								
266			1					1
Total	4035	5181	6073	5807	532	1694	298	23620

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1942-43 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug 282	Sept 283	Oct 284	Nov 285	Dec 286	Jan 287	Feb 288	Total
Under 152		24	19	2	4		1	50
152		12	3		4			19
154		8	7	2	10		1	28
156		8	9	2	7			26
158		10	9	3	16	1	3	42
160		7	5	1	17		4	34
162		12	9	1	14		8	44
164		10	9	2	25	1	8	55
166	1	6	6	3	13		10	39
168		3	5		19	1	1	29
170		6	3	2	13		3	27
172		1	1	1	12		4	19
174		2	2	2	13		4	23
176		1	1	1	7	1	3	14
178		1	1	1	3	1	1	8
180	1	1	1		1		1	5
182	2	7		2	3	1	1	16
184	1	11	4	3	1	1	5	26
186	1	8	3	1			5	18
188	4	8	3	2	4		2	23
190	3	19	7	3	7	1	12	52
192	1	34	8	3	4	1	15	66
194	11	57	17	5	6	6	14	116
196	21	80	14	11	13	2	23	164
198	33	98	42	26	12	4	35	250
200	57	147	32	25	30	6	44	341
202	73	195	60	27	21	11	57	444
204	87	276	60	67	78	22	78	668
206	103	290	79	55	45	28	98	698
208	114	373	102	102	91	48	110	940
210	118	380	102	113	100	62	129	1004
212	140	379	86	137	111	53	157	1063
214	134	417	95	155	194	111	175	1281
216	110	306	61	107	98	77	160	919
218	103	286	64	147	193	124	151	1068
220	72	222	54	128	141	82	133	832
222	75	147	30	95	78	77	95	597
224	43	86	21	98	140	92	93	573
226	40	66	16	49	55	73	69	368
228	19	30	10	56	83	85	66	349
230	20	23	7	37	45	54	61	247
232	10	13	6	26	31	41	48	175
234	6	10	5	16	33	54	42	166
236	3	10	2	14	19	21	36	105
238	1	2	2	12	22	33	28	100
240	3	2		5	7	14	22	53
242	1	1		4	5	9	24	44
244	3	1		1	6	6	12	29
246	1	1		1	7	3	13	26
248					1	5	5	11
250		1			1	1	5	8
252						1	4	5
254					1	2	1	4
256				2		1		3
258						2	5	7
260						1		1
262							1	1
264					1	1		2
266					1		1	2
268							2	2
274							1	1
Total	1415	4098	1082	1558	1866	1221	2090	13330

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1943-44 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Jul 294	Aug 295	Sept 296	Oct 297	Nov 298	Dec 299	Jan 300	Feb 301	Total
Under 152	10	54	26	69	49	14	3		225
152	3	29	6	32	31	9	1		111
154	1	26	15	37	45	10	5		139
156	3	38	13	38	58	20	2		172
158	4	39	17	52	79	12	6		209
160	2	41	17	60	86	21	6		233
162	3	38	25	57	97	32	5		257
164	4	34	20	56	83	32	5	1	235
166	3	24	17	55	65	28	12		204
168	3	24	16	65	71	22	7		208
170	1	25	8	55	56	30	14		189
172		16	11	40	36	32	16		151
174	1	12	10	35	33	24	11		126
176		8	9	21	32	19	15		104
178	1	4	6	12	20	20	15		78
180	1	4	3	13	17	8	16		62
182		2	4	10	13	11	12		52
184	1	2	4	5	8	8	5		33
186	1	2	1	4	7	10	8		33
188	2	5	5	2	18	5	5		42
190	1	6	4	5	20	11	6		53
192	1	10	7	2	26	5	3		54
194	3	11	7	3	23	7	5		59
196	5	11	10	7	52	15	3		103
198	4	17	10	10	39	23	10		113
200	6	14	16	2	50	23	6		117
202	5	16	20	8	57	23	15		144
204	5	23	25	11	38	16	8		126
206	9	31	21	24	52	28	11	1	177
208	16	39	31	14	49	25	10		184
210	19	67	36	30	65	24	17	1	259
212	26	86	63	28	64	36	10	2	315
214	35	122	79	42	71	33	14	1	397
216	37	175	108	47	131	50	29	1	578
218	47	227	140	84	139	59	40	2	738
220	45	266	142	74	218	71	57	5	878
222	47	273	151	71	188	86	76	5	897
224	33	270	154	79	267	129	92	6	1030
226	22	223	130	70	249	109	118	11	932
228	16	191	108	59	288	140	168	6	976
230	12	162	79	51	235	136	150	9	834
232	9	97	53	34	190	129	140	10	662
234	4	67	37	23	157	123	155	9	575
236	3	52	33	15	123	104	136	10	476
238	2	33	21	12	98	77	118	5	366
240	1	19	11	7	70	69	123	7	307
242		14	4	7	45	50	100	3	223
244		6	7	4	39	36	71	2	165
246		2	2		23	30	44	2	103
248		4	1	4	17	26	32	2	86
250		6			13	12	27	1	59
252		2			2	10	18		32
254			1		3	7	13	1	25
256				1	2	5	2	1	11
258					1	5	5		11
260					1	2	2		5
262					1	1	1		3
264					2		1		3
266						2	1		3
Total	457	2969	1744	1546	4012	2104	2006	104	14942

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1944-45 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug 307	Sept 308	Oct 309	Nov 310	Dec 311	Jan 312	Feb 313	Total
Under 152	37	6	13	1		1	1	59
152	23	3	10		1			37
154	40	10	13		1			64
156	35	9	21	1	3	1		70
158	40	8	30	2	1	2		83
160	46	20	26	2	2	4	1	101
162	55	16	60		3	4	1	139
164	40	32	67	5	1	2		147
166	34	39	73	4	2	2	2	156
168	38	35	98	10	2	7	1	191
170	36	32	95	8	4	9	3	187
172	15	40	103	10	6	6	4	184
174	22	51	94	6	5	4	4	186
176	23	38	90	8	5	7	1	172
178	22	45	87	14	11	7	7	193
180	26	40	67	9	4	7	2	155
182	36	27	71	13	8	6	3	164
184	37	32	61	15	9	8	3	165
186	34	44	65	13	5	6	5	172
188	50	60	65	19	6	7	2	209
190	46	55	97	12	7	4	1	222
192	63	74	93	15	4	2	3	254
194	76	81	120	23	5	6	3	314
196	67	128	168	28	6	7	2	406
198	67	132	220	34	5	6	3	467
200	69	129	256	44	9	11	2	520
202	46	153	275	46	8	9	3	540
204	53	171	249	62	9	20	2	566
206	53	171	300	66	8	16	1	615
208	46	161	280	79	7	28	5	606
210	37	148	264	98	8	26	2	583
212	33	152	251	91	8	19	2	556
214	28	128	223	78	5	21	1	484
216	28	133	197	104	12	27	1	502
218	27	89	167	85	8	17	1	394
220	28	71	163	86	7	21	1	377
222	22	73	137	70	8	17	1	328
224	29	67	120	71	12	19	2	320
226	35	59	117	78	16	21	1	327
228	43	84	133	75	15	31	1	382
230	41	85	136	84	19	26	1	392
232	64	76	142	111	18	49	3	463
234	57	90	158	118	26	47	6	502
236	55	83	141	116	38	53	13	499
238	58	80	137	122	42	62	13	514
240	43	84	114	119	55	53	15	483
242	38	81	91	121	62	67	17	477
244	17	72	98	104	50	60	11	412
246	16	58	60	83	35	37	8	297
248	13	41	52	81	36	27	8	258
250	13	21	30	56	33	28	8	189
252	11	9	26	42	23	16	4	131
254	1	15	13	33	13	12	4	91
256	3	6	13	14	10	17	4	67
258	1	10	7	10	7	2	3	40
260		2	1	7	6	7	1	24
262	1	6		3	3	4	1	18
264		2	1	1	2	1	1	8
266		3	1					4
268				1				1
272				2				2
274				1				1
Total	2017	3670	6260	2614	724	986	199	16470

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1945-46 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug 319	Sept 320	Oct 321	Nov 322	Dec 323	Jan	Feb 325	Total
Under 152	2			1				3
152		2						2
154		8						8
156		4	4	4				12
158		12	7	3				22
160	2	2	4	5				13
162		2	11	11				24
164		6		4				10
166	2	12	7	9	1			31
168		6	7	12	2			27
170		8	15	11	1			35
172		12	15	12	1			40
174	5	6	7	11	4			33
176		10	4	14	4			32
178	2	12	4	11	5			34
180	2	10	11	7	4			34
182	2	14	11	6	1			34
184	2	20	18	6	1		1	48
186	7	20	15	6	1			49
188	2	12	29	5			1	49
190	9	28	18	3	1			59
192	34	47	15	2	1		2	101
194	27	22	29	5			1	84
196	36	41	44	5	1			127
198	45	24	26	5	2			102
200	68	55	62	4	4		1	194
202	102	59	80	6	2		1	250
204	86	55	91	7	4		1	244
206	145	92	164	15	4		4	424
208	185	96	164	23	9		2	479
210	147	104	262	17	11		4	545
212	161	116	230	32	10		10	559
214	158	120	262	48	16		8	612
216	138	133	252	50	19		9	601
218	127	157	258	35	20		10	607
220	99	128	314	46	15		11	613
222	56	79	240	40	16		10	441
224	41	73	168	35	17		16	350
226	45	51	128	28	12		18	282
228	38	43	117	33	13		10	254
230	25	43	88	23	8		15	202
232	9	31	47	15	6		15	123
234	14	31	73	13	9		20	160
236	11	24	40	8	3		11	97
238	16	18	36	9	5		15	99
240	16	12	18	9	3		19	77
242	14	18	47	10	5		16	110
244		6	55	11	5		20	97
246	14	10	36	11	2		31	104
248	5	20	29	6	7		17	84
250	5	14	15	12	4		25	75
252	5	14	33	5	5		25	87
254	5	6	11	5	2		14	43
256		12	15	4	3		13	47
258	2	4	4	4	1		7	22
260	5		4	4	1		3	17
262				2			6	8
264	2	4		2			4	12
266			4	1			2	7
268		2						2
270				1				1
272				1			1	2
Total	1923	1970	3648	733	271		399	8944

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1946-47 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug 332	Sept 333	Oct 334	Nov 335	Dec 336	Jan 337	Feb 338	Total
Under 154			1			9	14	24
154			1					1
156			1					1
158		1	2		1			4
160		1	3		1			5
162		1	4		1		1	7
164		3	7		1			11
166		2	7		2			11
168		2	18		2	1	1	24
170		4	24		5	1	1	35
172	3	3	30		5	1	1	43
174	2	8	26		4	1		41
176	4	10	47		4	1		66
178	1	6	47		4	2	1	61
180	5	8	55	1	6	1	1	77
182	9	4	43		8	2	1	67
184	11	6	21	1	3	2	1	45
186	8	4	30	1	8	2	1	54
188	7	4	23	1	6	2	1	44
190	3	6	22	1	9	2	1	44
192	8	4	10	1	8	2	1	34
194	6	3	15	1	8	2	1	36
196	4	6	9	1	6	1	1	28
198	5	2	7	1	6	2	2	25
200	3	1	8		4	1	2	19
202	2	2	7		4	1	1	17
204	1	2	5		4		1	13
206	3	4	7		2	1	1	18
208	4	3	6		2			15
210	5	2	5		4			16
212	3	3	2		2			10
214	6	7	4					17
216	6	5	3					14
218	8	8	2		2			20
220	13	8	2					23
222	11	14	2		1			28
224	13	16	1					30
226	32	20	2		1			55
228	27	18	2		2			49
230	38	39	1		3			81
232	38	30	1		1			70
234	39	32			2	1		74
236	24	31	1		2			58
238	28	24			1			53
240	15	18			2			35
242	18	20			5			43
244	14	17	2		4			37
246	4	12	1		4			21
248	8	3			1			12
250	4	9			2			15
252	6	5			3			14
254	5	4			2			11
256	3	5			2			10
258	3	2			3			8
260	2	2			3			7
262	2	2			1			5
264	1	3						4
266		1						1
268	1	1	1					3
270		1						1
272	1							1
274		1						1
278	1							1
Total	468	463	518	9	167	38	35	1698

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1947-48 SEASON, GIVEN BY LUNAR MONTHS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug 344	Sept 345	Dec 348	Jan 349	Feb 350	Total
Under 158	2					2
160	7					7
162	9	1				10
164	14	2				16
166	21	3				24
168	34	5				39
170	37	6	1		1	45
172	33	4	1	1		39
174	54	8	1	1	1	65
176	62	13	1		2	78
178	58	10	1	1	3	73
180	57	13	2	2	2	76
182	68	15	1	2	6	92
184	58	17	2	1	5	83
186	63	11	2	2	8	86
188	48	10	1	3	11	73
190	34	15	2	3	11	65
192	20	9	2	3	9	43
194	16	11	3	4	9	43
196	11	3	2	4	11	31
198	5	7	2	3	9	26
200	2	4	1	3	11	21
202	1	2	2	3	8	16
204			1	3	6	10
206	2	2	1	2	4	11
208	1	1		1	3	6
210	2			1	3	6
212	1			1		2
214	1	1			2	4
216	1	1				2
218	2	1				3
220	2				1	3
222	2	2				4
224						
226	2	1				3
228						
230		2				2
232	1	2				3
234	1	3				4
236						
238	1	1				2
240	2					2
242		1				1
244	1	1				2
246						
248	1	1				2
250						
252		1				1
254						
256		1				1
258	1					1
260		1				1
262						
264		1				1
266		1				1
Total	738	194	29	44	126	1,131

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1948-49 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish Are Given in Hundred Thousands, i.e., 00,000 Omitted)

	Numbers of fish taken						
	Aug	Sept	Oct	Nov	Dec	Jan	Total
	356	357	358	359	360	361	
Length mm.							
Under 154	9	71	172	2	60		314
154	1	13	40	1	30		85
156	5	29	51	2	21		108
158	4	19	57	2	43		125
160	4	42	67	3	37		153
162	10	42	65	3	55		175
164	11	36	59	3	57		166
166	12	57	57	5	67		198
168	15	55	75	5	48		198
170	17	59	67	3	80		226
172	22	62	67	4	55		210
174	24	55	51	5	65		200
176	24	57	65	6	48		200
178	25	71	65	5	47		213
180	25	57	30	3	48		163
182	28	48	41	5	44		166
184	30	57	67	5	45		204
186	26	77	75	3	28		209
188	20	44	45	3	28		140
190	19	61	28	3	18		129
192	22	57	24	2	28		133
194	11	36	69	2	26		144
196	6	33	49	2	14		104
198	6	23	36	2	27		94
200	3	18	32	2	20		75
202		4	18	1	10		33
204	1	5	14	2			22
206	1		8	1	4		14
208	1	2	2		4		9
210	1	1	2		3		7
212		1	4				5
216			2				2
218	1						1
220		2	2				4
222	1		2				3
224			2				2
226			2			1	3
228		1					1
232					1	1	2
234			2				2
236			2				2
238						1	1
248			2				2
250			2				2
258	1						1
Total	386	1,195	1,520	85	1,061	3	4,250

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1949-50 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i. e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug 369	Sept 370	Oct 371	Nov 372	Dec 373	Jan 374 [1]	Total
Under 164		4		2			6
166		11					11
168							
170	5	4		2			11
172		7					7
174	9	4	5		1		19
176	5	7	2				14
178	9	4	2	2			17
180	28	7		2			37
182	9	18	11	2	4	1	45
184	42	18	2	10	3		75
186	42	29	25	8	5	1	110
188	52	22	20	13	6	1	114
190	84	69	43	11	11	2	220
192	117	101	43	19	15	2	297
194	94	145	77	40	25	3	384
196	150	116	104	53	39	5	467
198	103	156	118	69	48	7	501
200	94	214	134	59	48	7	556
202	75	232	97	72	52	7	535
204	52	257	138	69	59	8	583
206	61	206	98	97	73	10	545
208	47	254	98	112	59	8	578
210	33	167	142	118	65	9	534
212	23	235	131	101	50	7	547
214	9	199	125	105	42	6	486
216	5	228	163	91	44	6	537
218	9	199	140	68	31	4	451
220	9	152	106	68	28	4	367
222	5	148	108	50	25	3	339
224		94	111	57	13	2	277
226		87	59	21	13	2	182
228		43	45	11	13	2	114
230		58	46	17	5	1	127
232		43	11	15	3	1	73
234		29	14	11	2		56
236		14	9	8	2		33
238		4	11	6	3	1	25
240		4	9	8			21
242			5	10	2	1	18
244		4	7	2			13
246			5	6			11
248		4		2			6
250		4	2	4	1		11
252		11		2	2		15
254		4		4			8
256							
258							
260							
262							
264		4			1		5
266		4		2			6
268							
270			2				2
272					1		1
274							
Total	1171	3624	2268	1429	794	111	9397

1/ No samples taken during January. Catch weighted to December samples.

LENGTH COMPOSITION OF THE MONTEREY COMMERCIAL CATCH OF PILCHARD DURING THE 1950-51 SEASON, GIVEN BY LUNAR MONTHS
(Numbers of Fish Are Given in Hundred Thousands, i.e., 00,000 Omitted)

	Numbers of fish taken						
	Aug	Sept	Oct	Nov	Dec	Jan	Total
	381	382	383	384	385	386	
Length mm.							
178			1				1
192		1	1				2
194		2				2	4
196		1	1	3		2	7
198		2	2			1	5
200	2	1	3	8	1	2	17
202	3	3	3	16	1	9	35
204	3	5	5	19	3	12	47
206	8	3	8	33	9	12	73
208	13	3	12	55	11	21	115
210	22	7	20	44	21	6	120
212	32	8	22	49	16	11	138
214	36	11	28	46	28	13	162
216	44	11	26	36	45	6	168
218	47	13	27	38	37	8	170
220	50	17	25	30	41	5	168
222	48	16	21	27	50	5	167
224	47	21	24	27	31	2	152
226	32	14	18	17	36	1	118
228	29	12	16	5	31	4	97
230	22	9	9	17	26	1	84
232	12	7	8	2	15		44
234	8	5	4	2	11		30
236	7	6	8		12		33
238	4	4	1		7	1	17
240	4	3	1		4		12
242	3	1	1		4		9
244		1	1		1		3
246		1					1
248		1			1		2
250			1		3		4
252	1	1			1		3
258			1				1
260					1		1
Total	477	190	298	474	447	124	2,010

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1919-20 SEASON, GIVEN BY QUARTERLY PERIODS
(Numbers of Fish are Given in Hundred Thousands, i. e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Jul-Sept	Oct-Dec	Jan-Mar	Total	Length mm	Jul-Sept	Oct-Dec	Jan-Mar	Total
Under 154			3	3	222			28	28
154			1	1	224		2	30	32
156			1	1	226			26	26
158					228			28	28
160		2	2	4	230			23	23
162			1	1	232			24	24
164			1	1	234			17	17
166			1	1	236			18	18
168			1	1	238		2	19	21
170					240			19	19
172			1	1	242		2	16	18
174			1	1	244			16	16
176					246		2	14	16
178			1	1	248			12	12
180			2	2	250			16	16
182		7	2	9	252		2	13	15
184			5	5	254		2	13	15
186		2	5	7	256		2	9	11
188		2	6	8	258			10	10
190		7	7	14	260			4	4
192		5	10	15	262			5	5
194		15	15	30	264			4	4
196		12	16	28	266			4	4
198		19	21	40	268			3	3
200		10	27	37	270			3	3
202		2	29	31	272			2	2
204		10	31	41	274			2	2
206		5	27	32	276			1	1
208		5	27	32	278			1	1
210		2	32	34	280			1	1
212			32	32	282				
214			32	32	284				
216		2	35	37	286			1	1
218			32	32	288				
220			29	29			—	—	—

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1920-21 SEASON, GIVEN BY QUARTERLY PERIODS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Length mm	Numbers of Fish Taken			
	Jul-Sept	Oct-Dec	Jan-Mar	Total
Under 154			2	2
154				
156				
158			1	1
160			1	1
162			2	2
164			2	2
166			3	3
168			4	4
170			4	4
172			7	7
174			6	6
176			5	5
178			7	7
180			6	6
182			9	9
184			10	10
186			7	7
188			8	8
190			7	7
192			6	6
194			5	5
196			5	5
198			4	4
200			6	6
202			14	14
204			17	17
206			25	25
208			27	27
210			32	32
212			28	28
214			28	28
216			26	26
218			25	25
220			20	20
222			20	20
224			20	20
226			17	17
228			18	18
230			18	18
232			20	20
234			17	17
236			13	13
238			15	15
240			9	9
242			11	11
244			10	10
246			8	8
248			9	9
250			8	8
252			6	6
254			6	6
256			7	7
258			4	4
260			7	7
262			6	6
264			3	3
266			2	2
268			3	3
270			3	3
272			2	2
274			1	1
276			1	1
278			1	1
280			1	1
282				
284				
286			1	1
Total			626	626

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1921-22 SEASON, GIVEN BY QUARTERLY PERIODS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Length mm	Numbers of Fish Taken				Length mm	Numbers of Fish Taken			
	Jul-Sept	Oct-Dec	Jan-Mar	Total		Jul-Sept	Oct-Dec	Jan-Mar	Total
Under 154			2	2	220			33	33
154					222			34	34
156					224			26	26
158			1	1	226			32	32
					228			38	38
164			1	1	230			39	39
166			1	1	232			41	41
168			2	2	234			43	43
170			1	1	236			43	43
172			1	1	238			43	43
174			4	4	240			47	47
176			3	3	242			40	40
178			3	3	244			38	38
180			5	5	246			40	40
182			9	9	248			40	40
184			11	11	250			30	30
186			13	13	252			25	25
188			13	13	254			26	26
190			11	11	256			24	24
192			11	11	258			19	19
194			13	13	260			12	12
196			16	16	262			11	11
198			8	8	264			12	12
200			11	11	266			9	9
202			10	10	268			9	9
204			6	6	270			6	6
206			8	8	272			5	5
208			14	14	274			3	3
210			16	16	276			2	2
212			23	23	278			1	1
214			26	26					
216			33	33	Total			1,081	1,081
218			34	34					

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1922-23 SEASON, GIVEN BY QUARTERLY PERIODS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Jul-Sept	Oct-Dec	Jan-Mar	Total
Under 154		4		4
154				
160		1		1
162				
164		1		1
166				
168		2		2
170		1	1	2
172		2	1	3
174		3	2	5
176		5	4	9
178		7	6	13
180		9	6	15
182		14	13	27
184		20	18	38
186		30	30	60
188		35	34	69
190		38	47	85
192		39	61	100
194		37	53	90
196		28	54	82
198		26	45	71
200		18	39	57
202		16	41	57
204		11	27	38
206		11	25	36
208		8	26	34
210		7	30	37
212		7	28	35
214		4	29	33
216		3	34	37
218		3	35	38
220		2	39	41
222		1	39	40
224		1	44	45
226		2	47	49
228		1	46	47
230			50	50
232			48	48
234			48	48
236			43	43
238			50	50
240			67	67
242			57	57
244			63	63
246			54	54
248			56	56
250			39	39
252			39	39
254			35	35
256			33	33
258			22	22
260			17	17
262			16	16
264			15	15
266			8	8
268			10	10
270			6	6
272			5	5
274			3	3
276			1	1
278			1	1
280				
282			1	1
Total		397	1,691	2,088

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1923-24 SEASON, GIVEN BY QUARTERLY PERIODS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Length mm	Numbers of Fish Taken				Length mm	Numbers of Fish Taken			
	Jul-Sept	Oct-Dec	Jan-Mar	Total		Jul-Sept	Oct-Dec	Jan-Mar	Total
Under 154			8	8	218			39	39
154			1	1	220			45	45
156			1	1	222			48	48
158					224			39	39
160			1	1	226			45	45
162			1	1	228			38	38
164					230			39	39
166			2	2	232			39	39
168			3	3	234			41	41
170			4	4	236			40	40
172			3	3	238			29	29
174			7	7	240			33	33
176			8	8	242			33	33
178			15	15	244			35	35
180			14	14	246			44	44
182			18	18	248			33	33
184			26	26	250			38	38
186			23	23	252			29	29
188			28	28	254			19	19
190			22	22	256			23	23
192			28	28	258			25	25
194			36	36	260			22	22
196			46	46	262			17	17
198			65	65	264			11	11
200			85	85	266			9	9
202			96	96	268			11	11
204			99	99	270			6	6
206			98	98	272			5	5
208			101	101	274			4	4
210			83	83	276			1	1
212			66	66	278			2	2
214			51	51					
216			50	50	Total			1,931	1,931

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1924-25 SEASON, GIVEN BY QUARTERLY PERIODS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Jul-Sept	Oct-Dec	Jan-Mar	Total
Under 154		17	2	19
154		7	3	10
156		14	2	16
158		19	9	28
160		37	9	46
162		42	14	56
164		46	9	55
166		58	15	73
168		54	20	74
170		62	27	89
172		53	37	90
174		46	31	77
176		39	34	73
178		29	39	68
180		31	34	65
182		21	44	65
184		31	45	76
186		23	35	58
188		25	33	58
190		17	44	61
192		23	44	67
194		30	31	61
196		31	38	69
198		37	35	72
200		63	59	122
202		77	70	147
204		114	83	197
206		157	98	255
208		176	138	314
210		184	138	322
212		184	184	368
214		148	199	347
216		110	190	300
218		82	194	276
220		55	164	219
222		35	143	178
224		36	139	165
226		20	152	172
228		13	134	147
230		11	140	151
232		9	149	158
234		8	138	146
236		9	132	141
238		11	116	127
240		11	118	129
242		10	104	114
244		9	118	127
246		16	108	124
248		11	97	108
250		10	90	100
252		10	75	85
254		14	66	80
256		17	50	67
258		6	55	61
260		7	37	44
262		7	37	44
264		6	33	39
266		4	34	38
268		2	21	23
270		1	11	12
272		3	13	16
274		2	7	9
276		1	6	7
278			3	3
280			2	2
282			2	2
284			2	2
286			1	1
Over 288			2	2
Total		2,431	4,486	6,917

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1925-26 SEASON, GIVEN BY QUARTERLY PERIODS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Jul-Sept	Oct-Dec	Jan-Mar	Total	Length mm	Jul-Sept	Oct-Dec	Jan-Mar	Total
Under 154			18	18	218		67	95	162
154			10	10	220		56	99	155
156			10	10	222		44	111	155
158			16	16	224		30	108	138
160		1	8	9	226		20	125	145
162			16	16	228		11	106	117
164			25	25	230		8	82	90
166		1	47	48	232		3	79	82
168		2	50	52	234		1	98	99
170		1	41	42	236			83	83
172		1	63	64	238		1	71	72
174		1	59	60	240			68	68
176		1	51	52	242			66	66
178		3	47	50	244			66	66
180		4	34	38	246			52	52
182		6	37	43	248			46	46
184		8	22	30	250			37	37
186		13	32	45	252			36	36
188		28	30	58	254			34	34
190		35	33	68	256			32	32
192		58	36	94	258			30	30
194		70	60	130	260			26	26
196		104	62	166	262			18	18
198		122	73	195	264			16	16
200		132	77	209	266			13	13
202		132	74	206	268			8	8
204		124	63	187	270			7	7
206		104	60	164	272			2	2
208		104	55	159	274			2	2
210		87	48	135	276			4	4
212		71	51	122	278			2	2
214		68	64	132	280			2	2
216		71	77	148					
					Total		1,593	3,073	4,666

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1926-27 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Oct	Nov	Dec	Jan	Feb	Mar	Total
Under 154						1	1
160	2			1			3
162	2	1		2			5
164	3			2			5
166	4			2			6
168	4	1		3			8
170	3	1		1			5
172	1	2		2			5
174	2	1					3
176	2	2		5			9
178	2	1		3			6
180	1	1		2			4
182	2	2				1	5
184	2	3	1	3			9
186	1	5	1	3			10
188	3	8	2	4	2	1	20
190	1	9	2	3	1		16
192	2	10	3	2	2		19
194	2	20	7	9	3		41
196	2	15	5	9	1		32
198	2	20	10	14	1	1	48
200	2	23	14	16	2	1	58
202	2	35	15	19	5	3	79
204	4	35	17	30	2	3	91
206	5	41	17	28	7	7	105
208	5	53	21	44	5	19	147
210	7	51	24	45	6	24	157
212	7	51	24	46	11	34	173
214	7	38	22	36	14	37	154
216	7	27	23	36	17	39	149
218	8	34	23	42	13	50	170
220	6	38	20	35	21	48	168
222	4	26	18	36	19	54	157
224	3	16	17	40	26	60	162
226	3	11	11	36	30	71	162
228	3	14	13	47	42	65	184
230	3	10	6	35	44	68	166
232	1	4	3	36	44	75	163
234	1	5	5	39	46	73	169
236		2	3	29	45	56	135
238		2	2	32	43	60	139
240				26	30	40	96
242		1		21	22	33	77
244			1	11	31	41	84
246				12	16	23	51
248				7	19	35	61
250				4	23	31	58
252				5	5	23	33
254				5	12	30	47
256		1		8	8	19	36
258				1	5	14	20
260				2	8	8	18
262				2	6	5	13
264				2	5	7	14
266				2	5	4	11
268					4	7	11
270					2	7	9
272					2	3	5
274						3	3
276						1	1
278					1	3	4
280						1	1
282							
284						2	2
Total	121	620	330	885	656	1,191	3,803

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1927-28 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
Under 154				12	16	7		35
154					2	3		5
156				3	3	2		8
158					2	1		3
160		1		1	4	2		8
162		1		1	3	3		8
164		1		1	4	2		8
166		1		1	4	1		7
168		1			3	1		5
170		1			2	2		5
172		1		1	4	2		8
174		1			3	2		6
176		2	1		2			5
178	1	1	1		3	2		8
180		2	2	2	2	2		10
182	1	1	2	3	3			10
184	1	1	2	3	7	1		15
186	2	2	5	4	5	4		22
188	2	2	5	6	4	2		21
190	1	2	5	10	6	4	1	29
192	1	1	3	10	6	3	1	25
194	2	2	7	8	9	1		29
196	2	2	9	10	7	2	1	33
198	2	2	14	11	8	3	4	44
200	1	4	16	13	6	3	4	47
202	2	4	19	15	7	5	4	56
204	1	5	26	22	6	7	3	70
206	1	5	39	28	9	8	5	95
208	1	6	33	24	9	8	6	87
210	1	8	49	42	12	20	12	144
212	1	6	45	41	13	21	8	135
214		6	60	40	14	17	10	147
216		7	71	52	27	29	16	202
218		7	66	51	26	34	28	212
220		7	58	39	30	39	28	201
222		6	49	50	26	50	33	214
224		4	37	32	24	55	35	187
226		4	33	34	36	75	59	241
228		3	25	22	32	67	57	206
230		2	21	16	36	74	71	220
232		3	12	11	30	63	58	177
234		1	7	8	27	51	46	140
236		1	5	6	34	70	74	190
238		1	5	4	19	59	61	149
240		1	4	3	18	61	58	145
242				1	8	42	48	99
244				2	12	39	42	95
246			1		12	32	48	93
248					6	24	26	56
250					5	14	27	46
252					4	12	26	42
254					2	8	17	27
256					2	10	15	27
258						6	12	18
260					1	6	10	17
262					1	3	11	15
264						2	8	10
266					1	1	8	10
268						1	4	5
270						3	5	8
272						1	2	3
274						1		1
276						1	1	2
280							1	1
Total	23	119	737	643	607	1,074	994	4,197

LENGTH COMPOSITION OF THE SAN PEDRO SUMMER CATCH ...

THE 1928-29 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Oct	Nov	Dec	Jan	Feb	Mar	Total
Under 154		11	1	1	5	4	22
154		1			3	1	5
156		1				1	2
158		1			3		4
160			1		7		8
162					4	2	6
164		1		1	9	1	12
166	1				4	1	6
168		1		1	18		20
170	1		1	2	12	2	18
172	1			5	14		20
174	1	1		4	18	1	25
176	2	2		4	33		41
178	2	1		4	28		35
180	2	8		6	37		53
182	2	15	1	7	31	1	57
184	7	12	2	5	24	1	51
186	6	16	3	6	22	3	56
188	5	29	7	10	24		75
190	8	34	10	14	37		103
192	10	34	12	21	31	2	110
194	12	52	21	29	27	4	145
196	10	50	29	50	34	2	175
198	14	53	41	60	52	2	222
200	12	69	55	85	35	4	260
202	15	57	66	89	46	6	279
204	18	58	63	101	48	4	292
206	18	74	80	102	56	4	334
208	19	75	83	93	37	7	314
210	20	76	95	109	30	9	339
212	19	71	88	127	50	11	366
214	14	67	81	115	27	6	310
216	14	72	86	103	34	8	317
218	12	64	82	106	24	13	301
220	10	53	70	72	33	14	252
222	9	51	59	75	33	33	260
224	8	30	50	66	24	35	213
226	7	23	39	40	22	30	161
228	5	21	27	34	39	70	196
230	4	15	21	28	45	59	172
232	2	14	23	34	52	90	215
234	2	4	13	18	61	114	212
236	4	5	14	21	61	88	193
238	2	4	10	21	58	119	214
240	1	3	3	11	54	104	176
242	1	2	6	23	65	110	207
244		2	1	6	35	89	133
246		2	3	4	52	96	157
248				8	52	91	151
250		1	1	6	43	63	114
252			1	11	26	72	110
254		1	1	3	18	46	69
256		1		2	19	45	67
258				2	11	28	41
260				1	4	32	37
262				1	7	26	34
264					7	20	27
266					1	14	15
268				1	3	12	16
270					3	4	7
272					3	6	9
274				1		7	8
276					1	1	2
278					3	3	6
280							
282						1	1
284						1	1
286						1	1
Total	300	1,238	1,250	1,749	1,699	1,624	7,860

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1929-30 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Nov	Dec	Jan	Feb	Mar	Total
Under 154		1	2			3
154						
156			1			1
158		4	1		1	6
160	3	1	1			5
162		4	4			8
164	1	5	3		1	10
166	3	7	5			15
168	4	6	5			15
170	3	5	11			19
172	6	9	8		3	26
174	6	13	12		1	32
176	14	13	15		1	43
178	10	13	14		2	39
180	37	17	14		2	70
182	46	16	16	1		79
184	80	26	34		2	142
186	97	28	34		3	162
188	135	38	43	1	3	220
190	143	55	39	2	3	242
192	208	86	63	7	5	369
194	227	125	92	11	12	467
196	244	173	124	17	16	574
198	271	189	127	25	23	635
200	212	195	119	42	26	594
202	192	208	129	48	39	616
204	170	188	103	53	36	550
206	101	166	92	66	30	455
208	101	120	73	46	25	365
210	76	129	57	61	20	343
212	66	90	59	38	18	271
214	38	76	44	37	18	213
216	29	77	27	31	16	180
218	26	54	24	41	15	160
220	14	32	25	37	18	126
222	9	45	18	23	16	111
224	6	32	26	53	15	132
226	6	17	18	42	20	103
228	3	15	19	56	40	133
230	1	21	18	64	37	141
232	6	20	24	61	56	167
234	4	13	39	77	82	215
236	11	16	35	114	82	258
238	4	23	28	90	97	242
240	10	13	31	83	98	235
242	6	7	31	105	103	252
244	3	12	27	70	100	212
246	4	13	39	73	88	217
248	10	6	18	48	92	174
250	4	5	18	53	93	173
252	4	7	15	48	64	138
254	9	5	4	25	60	103
256	3		5	26	49	83
258	1	1	3	13	38	56
260	1		1	11	31	44
262	3		2	7	27	39
264	1			5	27	33
266			2	1	18	21
268	1		1		15	17
270			1	1	7	9
272				2	7	9
274					8	8
276					4	4
278					3	3
280		1			1	2
282					2	2
284					1	1
286			1			1
288						

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1930-31 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Nov	Dec	Jan	Feb	Mar	Total
Under 154						
168			1			1
172	1					1
176	2	1	1			4
178	5	1	1			7
180	5	1	2			8
182	10	1	1			12
184	8	2	3			13
186	15	2	6			23
188	13	3	6			22
190	24	4	8			36
192	19	6	10			35
194	14	6	12			32
196	22	8	15			45
198	20	9	19	1		49
200	34	9	23	2		68
202	33	11	30	2	1	77
204	34	15	25	3		77
206	41	17	32	1	1	92
208	55	22	28	7	4	116
210	39	21	41	9	8	118
212	33	18	32	12	7	102
214	27	18	27	14	13	99
216	20	15	24	20	15	94
218	12	9	18	20	19	78
220	7	7	12	21	17	64
222	5	3	8	20	19	55
224	4	2	8	18	18	50
226	2	2	6	16	19	45
228	1	1	6	24	14	46
230	1		7	22	16	46
232			8	28	15	51
234			7	30	16	53
236		1	8	39	21	69
238			10	46	24	80
240			11	39	33	83
242			8	47	30	85
244			6	47	36	89
246			5	48	33	86
248			6	37	30	73
250			4	43	30	77
252			3	30	28	61
254			1	24	17	42
256			2	16	16	34
258			1	11	12	24
260			1	9	11	21
262				7	11	18
264				5	5	10
266				3	5	8
268				1	2	3
270				1	1	2
272					3	3
274					1	1
Total	506	215	493	723	551	2,488

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1931-32 SEASON, GIVEN BY CALENDAR MONTHS
(Numbers of Fish Are Given in Hundred Thousands, i.e., 00,000 Omitted)

Length mm.	Numbers of Fish Taken					
	Nov.	Dec.	Jan.	Feb.	Mar.	Total
174			1			1
186		1	1	1		3
188		4	1			5
190		1		1		2
192		4	1	1		6
194		8	1	1	1	11
196	1	11	2	2		16
198		10	3	4		17
200		21	6	2		29
202	1	23	7	5	1	37
204	1	36	16	8	1	62
206	1	46	14	12	1	74
208	3	74	21	16	2	116
210	12	84	29	27	4	156
212	13	107	35	35	2	192
214	19	108	40	46	6	219
216	32	118	48	51	9	258
218	39	95	38	48	14	234
220	34	91	38	43	8	214
222	39	63	30	55	11	198
224	26	53	25	43	11	158
226	20	45	21	42	12	140
228	14	23	14	37	19	107
230	9	16	7	42	17	91
232	4	9	11	24	13	61
234	4	6	6	26	6	48
236	2	4	3	23	14	46
238	1	1	3	17	17	39
240	1		3	22	13	39
242	1			20	17	38
244			2	22	16	40
246	1		1	22	12	36
248		1	1	19	11	32
250			1	16	13	30
252				13	7	20
254			1	10	14	25
256		1		9	5	15
258				5	8	13
260			1	5	4	10
262				4	5	9
264				3	1	4
266				3	2	5
268					1	1
270					1	1
272				1		1
Total	278	1,064	432	786	299	2,859

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1932-33 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Nov	Dec	Jan	Feb	Mar	Total
162			1			1
164						
166			1	1		2
168			1			1
170	1					1
172		1		1		2
174		1	1	1		3
176		1	1	1		3
178	1	1	1	2		5
180	2	2	2	3		9
182	5	2	2	5		14
184	3	4	7	5	1	20
186	5	4	6	6	2	23
188	7	3	5	7	2	24
190	3	6	8	8	3	28
192	7	8	9	8	2	34
194	8	6	8	11	3	36
196	7	6	9	6	3	31
198	11	7	11	6	5	40
200	10	8	12	8	5	43
202	4	9	14	4	3	34
204	11	9	17	6	4	47
206	13	9	7	9	2	40
208	16	19	9	6	6	56
210	22	18	9	4	3	56
212	29	22	19	8	4	82
214	35	26	20	11	8	100
216	52	32	21	11	4	120
218	97	66	32	20	8	223
220	86	74	52	25	8	245
222	94	82	71	33	11	291
224	97	129	88	53	16	383
226	115	114	88	68	21	406
228	99	108	109	68	23	407
230	63	89	82	83	31	348
232	52	71	71	63	40	297
234	31	46	68	86	33	264
236	35	31	41	70	44	221
238	13	29	49	56	48	195
240	12	16	32	53	54	167
242	8	13	25	41	47	134
244	8	6	18	50	49	131
246	3	6	17	41	52	119
248	3	3	10	36	52	104
250		1	11	30	45	87
252	2	1	8	30	33	74
254	1	2	5	16	40	64
256	3	2	2	18	24	49
258			4	8	20	32
260	1	1	4	6	12	24
262			1	2	8	11
264			1	1	8	10
266				2	2	4
268				1	4	5
270				1	2	3
272				1	1	2
274					1	1
Total	1,075	1,094	1,090	1,100	797	5,156

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1933-34 SEASON, GIVEN BY CALENDAR MONTHS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Nov	Dec	Jan	Feb	Mar	Total
Under 154		1	1		1	3
154					1	1
156	1					1
158						
160			1			1
162			2			2
164			1			1
166	1		2			3
168	4	2	3		1	10
170	8	1	2		2	13
172	9	1	3		1	14
174	5	2	5		2	14
176	11	1	5		2	19
178	13	2	5		3	23
180	24	4	7		2	37
182	37	9	4		2	52
184	32	9	11		1	53
186	44	14	13		2	73
188	52	10	25		2	89
190	62	17	24	1		104
192	85	18	32	3		138
194	67	26	50	2	1	146
196	85	30	49	7	2	173
198	80	29	60	13		182
200	64	29	68	18	2	181
202	56	26	70	18	1	171
204	51	31	58	13	1	154
206	41	33	64	21	3	162
208	46	42	57	9	5	159
210	52	37	49	13	4	155
212	47	48	37	9	2	143
214	48	40	49	13	1	151
216	54	42	51	12	3	162
218	75	48	43	7	3	176
220	48	50	31	7	4	140
222	54	52	41	26	3	176
224	35	56	40	18	8	157
226	51	72	36	47	16	222
228	35	88	47	66	22	258
230	21	98	60	83	30	292
232	18	110	47	105	28	308
234	10	120	77	122	43	372
236	16	115	63	150	48	392
238	15	121	58	192	52	438
240	12	81	46	161	50	350
242	5	65	40	154	54	318
244	9	47	22	151	51	280
246	4	38	20	123	47	232
248	3	26	14	123	44	210
250	1	17	11	107	41	177
252	1	18	9	113	32	173
254	2	9	11	86	26	134
256	3	6	3	79	22	113
258	2	4	6	73	18	103
260	1	4	1	62	17	85
262		3	1	29	12	45
264		2	1	30	5	38
266		2	1	12	7	22
268			1	10	2	13
270		1		7		8
272				3	1	4
274				1		1
276			1	1		2
278				1		1
280						
282						
284		1				1
Total	1,500	1,758	1,539	2,301	733	7,831

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1934-35 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Nov	Dec	Jan	Feb	Mar	Total
Under 154					1	1
158					1	1
160					1	1
162					5	5
164					3	3
166					1	1
168					4	4
170		1			4	5
172		2	2		5	9
174		2		2	5	9
176		5			3	8
178	1	6	5	2	4	18
180		4			3	7
182		7	2		2	11
184	3	11			7	21
186	10	9	2	4	8	33
188	9	21	2	4	8	44
190	13	15	6	5	12	51
192	14	33	14	5	12	78
194	32	42	20	23	11	128
196	36	22	28	16	15	117
198	40	41	66	26	19	192
200	55	43	60	44	31	233
202	72	56	105	54	23	310
204	107	67	139	70	41	424
206	114	89	144	74	36	457
208	173	94	139	61	37	504
210	173	83	167	91	20	534
212	214	110	209	70	26	629
214	217	123	195	95	20	650
216	225	112	186	75	22	620
218	227	116	182	86	23	634
220	200	129	135	89	17	570
222	157	118	165	84	11	535
224	124	76	108	79	14	401
226	78	87	91	79	17	352
228	76	68	79	91	13	327
230	49	57	80	58	18	262
232	42	34	62	74	19	231
234	19	43	84	81	17	244
236	12	44	63	125	17	261
238	6	50	76	132	25	289
240	4	54	84	128	34	304
242	9	35	84	137	34	299
244	3	36	60	188	42	329
246	4	32	62	172	34	304
248	3	21	42	130	49	245
250		20	28	130	38	216
252		9	23	104	34	170
254		8	23	100	32	163
256		1	32	79	31	143
258		2	11	63	25	101
260		4	5	47	17	73
262		2	11	37	12	62
264			8	11	15	34
266		1	5	18	9	33
268		1		18	5	24
270				5	3	8
272			2	2	5	9
274				4	4	8
276				2	1	3
278					1	1
282					1	1
Total	2,521	2,046	3,096	3,074	1,007	11,744

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1935-36 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Nov	Dec	Jan	Feb	Mar	Total
Under 154		2	1	1	3	7
156	1					1
162	1					1
164		1				1
166		1				1
168		1				1
170	1					1
172		1	1			2
174	2	1				3
176	1	1	4			6
178	1		1			2
180		1				1
182	1	1	4			6
184	3	1	6			10
186	4	11	6	1		22
188	1	7	6			14
190	3	12	13			28
192	8	18	20	1		47
194	9	19	13			41
196	19	52	35	1		107
198	28	38	41	3	1	111
200	46	107	70		1	224
202	64	101	94	10	3	272
204	82	119	114	15	11	341
206	104	153	149	31	16	453
208	108	132	146	27	24	437
210	112	137	138	48	43	478
212	112	107	160	52	57	488
214	76	69	162	69	51	427
216	66	38	151	64	70	389
218	64	32	97	66	86	345
220	44	31	149	91	97	412
222	39	21	108	72	84	324
224	29	15	83	64	76	267
226	33	18	100	63	83	297
228	13	13	73	52	90	241
230	14	9	67	58	80	228
232	10	7	57	60	63	197
234	6	1	31	51	74	163
236	4	4	44	73	82	207
238	3	1	54	63	73	194
240	3	1	61	91	87	243
242	2	1	50	76	85	214
244	3	1	35	93	78	210
246	1	1	54	96	96	248
248		1	28	84	82	195
250	1	1	42	99	96	239
252			25	57	73	155
254	1		23	69	67	160
256			7	42	68	117
258			6	37	67	110
260	1		15	25	38	79
262			7	16	27	50
264	1		1	9	26	37
266			1	10	12	23
268				9	11	20
270				7	13	20
272			1	3	9	13
274			1	4	2	7
276				1	3	4
278					2	2
280					1	1
282					1	1
284					1	1
Total	1,125	1,289	2,555	1,804	2,113	8,946

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1936-37 SEASON, GIVEN BY CALENDAR MONTHS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Dec	Jan	Feb	Mar	Total
Under 154	1	6		1	8
154		1			1
156	1	2			3
158		1		3	4
160		2	1	1	4
162		3		3	6
164		3	1		4
166		1		1	2
168	1	1	1	3	6
170		1	1	1	3
172	1		1	1	3
174	2	1	1	3	7
176		3		3	6
178	1	3	4	10	18
180		5	3	4	12
182		3	3	7	13
184		1	6	12	19
186	2	4	7	7	20
188	1	6	12	6	25
190	1	6	6	9	22
192	3	8	7	6	24
194	2	4	19	9	34
196	6	15	15	16	52
198	14	14	19	22	69
200	20	18	20	30	88
202	31	24	34	34	123
204	55	34	35	45	169
206	113	54	41	64	272
208	162	64	75	82	383
210	194	73	89	90	446
212	169	84	102	114	469
214	164	71	104	121	460
216	153	78	132	136	499
218	106	67	145	163	481
220	88	55	120	139	402
222	49	36	134	160	379
224	35	37	134	144	350
226	19	39	107	132	297
228	6	28	85	129	248
230		36	60	94	190
232	2	29	111	118	260
234		37	98	112	247
236	1	35	73	108	217
238	2	29	69	105	205
240		28	79	99	206
242		32	66	109	207
244		24	63	85	172
246		19	67	109	195
248		12	82	114	208
250	1	17	41	121	180
252		14	51	105	170
254		8	47	78	133
256		8	48	88	144
258		8	37	60	105
260		6	34	45	85
262		3	23	39	65
264		3	15	16	34
266		1	10	13	24
268		2	12	13	27
270	1	1	4	9	15
272		1	1	7	9
274			1		1
276					
278				1	1
280					
Over 288		1			1
Total	1,407	1,210	2,556	3,359	3,532

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1937-38 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Nov	Dec	Jan	Feb	Mar	Total
Under 154	29	1	15	1	1	47
154	11	4			1	16
156	4				2	6
158	7	3			2	12
160	23		2	1	1	27
162	11	1	2	1	3	18
164	25	3	5	1	3	37
166	40	6	10	5	5	66
168	43	10	13	1	6	73
170	35	11	14	5	9	74
172	23	13	8	7	17	68
174	50	26	23	15	18	132
176	48	49	30	10	20	157
178	39	40	36	16	16	147
180	51	34	36	21	19	161
182	41	52	42	27	13	175
184	51	57	35	24	13	180
186	36	54	52	27	8	177
188	58	63	61	29	11	222
190	70	93	57	36	8	264
192	80	92	77	43	11	303
194	108	123	96	40	7	374
196	113	142	114	76	14	459
198	153	152	118	58	11	492
200	175	212	106	58	10	561
202	157	175	94	68	11	505
204	148	189	93	56	6	492
206	133	176	91	65	8	473
208	109	120	74	27	6	336
210	88	108	68	36	3	303
212	69	120	60	21	3	273
214	57	54	31	22	1	165
216	57	55	47	22	3	184
218	51	54	47	26	1	179
220	57	52	47	27	4	187
222	33	42	51	32	6	164
224	39	38	33	24	5	139
226	29	24	30	30	5	118
228	18	24	30	29	8	109
230	10	9	20	32	8	79
232	6	11	28	29	8	82
234	7	11	20	43	9	90
236	3	6	17	48	14	88
238	4	5	24	55	14	102
240	2	1	6	42	12	63
242		1	13	51	18	83
244	2	1	6	48	9	66
246			14	51	16	81
248			7	48	8	63
250			11	51	14	76
252			5	65	10	80
254			8	35	10	53
256				36	17	53
258			1	30	7	38
260			1	35	6	42
262			2	19	7	28
264				7	5	12
266			1	10	1	12
268				6	2	8
270			1	2	1	4
272					2	2
274			1	1		2
276				1		1
278	2			1		3
282				1		1
Total	2,405	2,517	1,934	1,734	497	9,087

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1938-39 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Oct	Nov	Dec	Jan	Feb	Mar	Total
Under 154	4	27	6	4	1	34	76
154	2	4	3			4	13
156	8	23	9	3	1	3	47
158	13	49	25	5		3	95
160	28	120	67	11	3	1	230
162	34	144	127	18	7	2	332
164	41	186	136	27	7	5	402
166	51	193	203	44	12	7	510
168	45	189	196	64	26	18	538
170	36	208	213	54	31	26	568
172	28	176	222	45	60	31	562
174	32	163	218	58	61	52	584
176	20	149	153	51	79	63	515
178	11	156	189	64	85	69	574
180	10	107	170	45	79	68	479
182	4	146	121	43	84	79	477
184	5	123	136	60	92	65	481
186	2	130	139	56	69	68	464
188	1	159	192	68	73	52	545
190	2	169	183	108	67	41	570
192	2	187	206	130	93	43	661
194	2	200	227	129	60	39	657
196	1	214	232	153	75	38	713
198	2	200	208	179	70	39	698
200	1	176	208	166	68	29	648
202		152	141	151	55	31	530
204		142	132	134	43	26	477
206	1	90	70	106	47	18	332
208		79	74	76	29	22	280
210	1	67	56	76	34	12	246
212	1	42	41	53	28	14	179
214		30	25	49	30	12	146
216		36	14	36	36	12	134
218		20	13	26	27	21	107
220		14	17	28	24	16	99
222		4	5	15	20	16	60
224		9	2	19	20	11	61
226		4		10	31	6	51
228		1		9	24	10	44
230				2	26	13	41
232			2	3	38	20	63
234		1		6	45	17	69
236					46	23	69
238				1	49	18	68
240				3	56	25	84
242		1		5	61	21	88
244				1	49	20	70
246				3	50	20	73
248				1	44	24	69
250					40	20	60
252					47	25	72
254				1	44	16	61
256					36	14	50
258					34	7	41
260					26	10	36
262					17	5	22
264				1	15	4	20
266					12	5	17
268					4	6	10
270					6	2	8
272					4	2	6
274					1	1	2
276					1	1	2
278					1	3	4
282					1		1
Total	388	4290	4381	2400	2404	1428	15291

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1939-40 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Nov	Dec	Jan	Feb	Mar	Apr	Total
Under 154	1	3		1	2	2	9
154		1			1		2
156	2	5		1			8
158	1	6	1	2	3	1	14
160	1	6	2	3	5	1	18
162	5	8	2	3	12	1	31
164	8	4	6	10	19	2	49
166	9	8	5	13	26	3	64
168	18	3	12	10	34	6	83
170	17	3	13	15	39	7	99
172	20	6	16	22	41	7	112
174	29	21	24	24	32	10	140
176	24	18	24	19	30	8	123
178	32	16	34	35	29	7	153
180	34	20	45	36	24	5	164
182	46	23	45	48	19	6	187
184	46	35	62	34	18	4	199
186	64	28	86	49	13	4	244
188	77	68	100	49	17	4	315
190	80	68	97	65	17	2	329
192	114	100	131	72	13	3	433
194	124	133	175	83	21	3	539
196	154	184	176	75	20	3	612
198	160	201	193	90	12	5	661
200	159	196	151	67	14	3	590
202	142	214	151	62	12	4	585
204	125	165	107	65	14	2	478
206	85	170	105	54	7	2	423
208	79	127	80	50	11	2	349
210	54	105	68	47	8	2	284
212	42	68	45	50	10	1	216
214	38	52	36	41	10	1	179
216	18	42	34	47	11	2	154
218	13	28	27	36	14	1	119
220	1	18	16	26	10	1	72
222	7	16	12	20	11	1	67
224	3	10	12	20	11		56
226	1	9	15	15	10	1	51
228	1	4	8	12	12	1	38
230		1	6	7	8	1	23
232			2	11	15	1	29
234		1	2	6	11	2	22
236			2	5	16	1	24
238				2	14	1	17
240			1	5	13	2	21
242		1	3	1	15	1	21
244			1	3	14		18
246			2	5	16	1	24
248			3	2	17	1	23
250			2	3	18	1	24
252					15	1	16
254			1		18	1	20
256			1	1	14	1	17
258					12		12
260			1		8	1	10
262			1		7	1	9
264					6		6
266				1	2		3
268				1	4		5
270					2		2
272				1	1		2
274					1		1
276					2		2
278					1		1
Total	1834	2200	2144	1425	862	136	8601

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1940-41 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Oct 260	Nov 261	Dec 262	Jan 263	Feb 264	Mar 265	Total
Under 154		2		4	7		13
154	2	2		1	1		6
156	4	2		1			7
158	9	4			1		14
160	13	7		2	2		24
162	28	19		2	2		51
164	45	31		11	3		90
166	54	72		7	8		141
168	50	85	4	23	8		170
170	84	108	8	33	19		252
172	63	126	7	24	23		243
174	69	174	10	39	47		339
176	63	193	19	50	39	1	365
178	95	220	10	41	46		412
180	82	174	23	60	43	1	383
182	119	244	42	69	56	1	531
184	128	324	35	110	49		646
186	130	364	66	122	58	1	741
188	190	478	87	156	86	1	998
190	182	530	107	185	98		1,102
192	178	496	148	185	96	1	1,104
194	139	437	149	183	91		999
196	182	400	164	208	110	1	1,065
198	143	341	171	205	80	1	941
200	165	328	153	176	88	1	911
202	119	278	144	202	81	1	825
204	87	187	113	226	80	1	694
206	97	183	89	177	68		614
208	82	163	93	181	69		588
210	61	94	82	168	58	1	464
212	50	74	58	134	48		364
214	37	50	48	105	50		290
216	22	33	49	119	54	1	278
218	20	31	29	103	50	1	234
220	13	15	36	99	46		209
222	4	20	30	58	45		157
224		5	22	41	35		103
226	2	7	9	33	30	1	82
228			9	22	19		50
230	2	2	5	19	14		42
232		2	2	10	17		31
234			5	13	15		33
236			1	7	20	1	29
238			3	4	9		16
240				5	9		14
242				5	4		9
244	2			1	6		9
246				1	9		10
248				4	2		6
250			1	1	4	1	7
252				1	6		7
254					3		3
256					2		2
258				1	2		3
260				1	4		5
262					1		1
264					3		3
266				1			1
268					1		1
270					1		1
274					1		1
Total	2,815	6,305	2,031	3,639	1,927	17	16,734

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1941-42 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish Are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of fish taken

Length mm.	Sept 271	Oct 272	Nov 273	Dec 274	Jan 275	Feb 276	Mar 277	Total
Under 154		2	2		7	3	1	15
154			1		7	2		10
156					6	4		10
158	1		2		5	3		11
160		1	2	2	7	2		14
162		4	4	3	9	7	1	28
164	5	7	9	3	12	6	2	44
166	6	15	5	4	13	7	5	55
168	11	17	13	9	19	9	7	85
170	11	24	25	10	24	15	7	116
172	14	56	23	16	32	16	7	164
174	23	70	29	9	35	26	9	201
176	33	82	29	18	29	31	7	229
178	20	109	45	36	35	35	12	292
180	23	142	54	32	48	43	14	356
182	22	169	47	32	51	51	14	386
184	11	206	79	50	64	59	19	488
186	18	248	82	52	60	55	21	536
188	29	332	116	107	98	93	23	798
190	30	356	128	133	121	104	34	906
192	39	455	167	186	165	131	40	1,183
194	42	445	196	180	197	161	47	1,268
196	28	497	200	217	216	184	47	1,389
198	29	421	202	233	196	173	46	1,300
200	32	393	196	184	183	163	46	1,197
202	25	261	158	167	140	164	48	963
204	20	216	120	126	108	142	41	773
206	6	150	84	115	87	124	29	595
208	9	110	85	72	50	89	27	442
210	5	86	57	48	48	54	21	319
212	8	59	54	28	27	54	18	248
214	3	53	34	20	33	43	20	206
216		22	27	18	19	32	14	132
218	1	22	24	7	10	25	12	101
220		19	15	2	13	16	13	78
222	1	11	18	7	6	23	11	77
224		5	8		6	16	10	45
226		4	5		4	6	12	31
228		4	2		2	5	8	21
230		1		2	3	2	6	14
232			2		1	2	4	9
234		1	2	1	1		2	7
236						4	2	6
238						2	1	3
240						1	1	2
242						2		2
246						2		2
248							1	1
Total	505	5,075	2,351	2,129	2,197	2,191	710	15,158

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1942-43 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish Are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of fish taken

Length mm.	Oct 284	Nov 285	Dec 286	Jan 287	Feb 288	Mar 289	Total
Under 154					1		1
154					1		1
156				1			1
158					1		1
160		1		2	2		5
162		4		2	1		7
164	2	2	5	5	2		16
166	1	7	5	7	2		22
168		24	6	14	4		48
170	9	31	22	14	7	1	84
172	6	63	39	36	15	2	161
174	4	72	70	64	21	1	232
176	24	97	85	80	28		314
178	25	129	117	103	38	4	416
180	47	130	117	105	50	2	451
182	63	128	132	137	54	4	518
184	55	152	118	128	68	4	525
186	83	127	146	108	61	3	528
188	99	120	130	120	69	2	540
190	126	124	149	116	54	2	571
192	137	125	182	112	55	2	613
194	152	152	219	122	60	2	707
196	246	167	225	132	50	1	821
198	222	172	204	119	56	2	775
200	300	242	243	152	71	3	1,011
202	383	256	232	156	85	3	1,115
204	370	301	290	184	75	4	1,224
206	462	330	290	202	107	2	1,393
208	379	392	312	206	88	3	1,380
210	363	378	292	167	91	5	1,296
212	302	345	279	138	85	4	1,153
214	210	328	236	157	71	5	1,007
216	142	251	136	96	51	4	680
218	92	147	117	72	34	2	464
220	54	114	70	39	22	1	300
222	19	72	39	25	13	1	169
224	13	33	20	8	6		80
226	5	22	12	9	7	1	56
228	4	10	6		2		22
230	2	10	4	3	3		22
232	1	4			2		7
234	1	2	1		1		5
236	1	5	1	2	1		10
238		1	1		1		3
240		1		1	1		3
248				1			1
Total	4,404	5,071	4,552	3,145	1,517	70	18,759

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1943-44 SEASON, GIVEN BY LUNAR MONTHS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Sept 296	Oct 298	Nov 298	Dec 299	Jan 300	Feb 301	Total
Under 154			1	3	6	4	14
154		1	1		1		3
156	1	1	9	1	2	1	15
158	1	1	7	2	7	1	19
160	1	2	11	2	2	1	19
162	4		12	3	13		32
164		2	13	5	19	1	40
166	6		15	14	19	3	57
168	5	4	16	13	47	2	87
170	15	11	15	14	48	5	108
172	20	9	17	28	57	5	136
174	15	10	21	29	74	4	153
176	25	21	28	37	88	12	211
178	21	33	35	42	88	15	234
180	26	25	30	38	102	10	231
182	27	36	38	30	90	10	231
184	22	26	37	43	77	13	218
186	50	48	45	39	82	11	275
188	76	77	68	42	87	12	362
190	89	122	86	55	85	10	447
192	109	175	113	80	108	17	602
194	154	228	155	108	108	18	771
196	195	252	149	121	144	16	877
198	187	225	152	134	144	20	862
200	194	225	147	136	133	24	859
202	161	172	106	118	132	20	709
204	171	151	101	115	102	17	657
206	117	145	80	102	94	17	555
208	96	143	54	96	92	13	494
210	113	96	61	81	61	13	425
212	79	85	52	64	58	12	350
214	73	94	52	76	62	8	365
216	68	81	50	75	72	8	354
218	63	67	40	72	61	6	309
220	52	60	44	54	53	8	271
222	32	48	30	70	65	11	256
224	35	36	15	65	41	7	199
226	21	30	9	63	43	4	170
228	17	23	9	53	35	4	141
230	4	13	4	36	27	5	89
232	4	6	2	29	28	2	71
234	2	3		22	21	1	49
236			2	14	11	2	29
238	1	4	1	5	5	1	17
240	2	2		7	10		21
242		2	1	6	3		12
244			1	3	3		7
246					1		1
250				1	1		2
252	1						1
254					1		1
258				1			1
262					1		1
Total	2355	2795	1935	2247	2714	374	12420

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1944-45 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Oct 309	Nov 310	Dec 311	Jan 312	Feb 313	Total
154				1		1
158					2	2
160					3	3
162					6	6
164				1	13	14
166	2		1	1	15	19
168	4	1	2	2	22	31
170		1	4	5	16	26
172	4	1	11	8	15	39
174	5	2	6	11	13	37
176	7	3	15	21	10	56
178	17	5	44	25	14	105
180	33	9	41	30	19	132
182	38	16	40	36	21	151
184	49	27	39	38	14	167
186	84	40	61	41	16	242
188	98	41	49	49	25	262
190	112	65	76	54	19	326
192	154	58	101	84	28	425
194	268	90	111	90	32	591
196	348	125	134	88	35	730
198	440	162	191	106	33	932
200	475	174	244	128	33	1,054
202	490	189	288	126	35	1,128
204	509	201	324	114	31	1,179
206	506	176	302	137	27	1,148
208	408	198	326	127	34	1,093
210	358	148	234	116	30	886
212	303	116	202	94	24	739
214	225	88	144	65	29	551
216	198	54	120	61	30	463
218	153	58	89	45	20	365
220	104	48	65	35	18	270
222	78	30	53	25	19	205
224	82	25	30	30	20	187
226	60	20	33	12	17	142
228	42	17	25	12	16	112
230	49	12	16	10	13	100
232	20	13	23	12	20	88
234	33	11	14	7	13	78
236	19	7	12	6	15	59
238	30	9	6	7	18	70
240	15	8	5	3	15	46
242	14	9	11	2	15	51
244	7	4	4	2	14	31
246	7	4	5	2	14	32
248	6	3	1		5	15
250	6			2	8	16
252	4	2	1	1	4	12
254				1	2	3
256		1			3	4
260					1	1
262	1					1
Total	5,865	2,271	3,503	1,873	914	14,426

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1945-46 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Oct 321	Nov 322	Dec 323	Jan 324	Feb 325	Mar 326	Total
154						1	1
156			20				20
158			20			1	21
160			20			2	22
162			39	3	2	3	47
164			13		4	6	23
166			26	1	14	8	49
168			26			4	30
170	4	3	26	3	8	5	49
172		7	33		18	1	59
174			72	1	2	1	76
176		14	105	1	6	1	127
178	4	21	177	3	2	3	210
180	13	17	138	1	14	2	185
182	4	21	138	4	12	3	182
184	13	21	138	9	26	6	213
186	48	69	79	17	26	8	247
188	74	69	105	36	36	9	329
190	113	131	157	44	58	14	517
192	147	176	144	87	52	17	623
194	186	240	250	86	46	26	834
196	269	244	276	90	54	19	952
198	238	282	295	59	71	25	970
200	316	220	250	50	73	24	933
202	273	230	243	60	79	15	900
204	290	214	243	62	81	15	905
206	195	238	243	60	61	20	817
208	238	216	230	48	85	15	832
210	174	200	250	38	75	15	752
212	174	176	197	50	91	20	708
214	126	141	125	50	50	12	504
216	156	134	190	50	54	8	592
218	61	86	112	35	69	8	371
220	52	114	92	36	61	13	368
222	26	52	112	21	58	8	277
224	26	34	79	20	42	4	205
226	9	31	39	18	24	1	122
228	13	17	46	15	34	2	127
230		10	13	10	22	3	58
232	4		20	6	18		48
234		3	13	6	24	1	47
236				3	10	2	15
238		3	20	4	8		35
240		7	13		6		26
242			20	4	2	1	27
244			20	9	2		31
246	4		13	3	2	1	23
248				6	12		18
250			7	3	6	1	17
252			7	3	4	1	15
254			7	1	2		10
256			7	3	2		12
258				4			4
260				3	2		5
262			7				7
266			7				7
268			7				7
Total	3250	3441	4929	1126	1510	355	14611

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1946-47 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Sept 333	Oct 334	Nov 335	Dec 336	Jan 337	Feb 338	Total
154						1	1
168					1	3	4
170					2		2
172					1	3	4
174					3	4	7
176				10	7	15	32
178	3			3	9	18	33
180	3	5		23	10	27	68
182	8	5	15	45	9	29	111
184	14	36	25	35	6	28	144
186	36	89	56	53	8	31	273
188	58	167	133	73	9	45	485
190	72	328	215	118	19	56	808
192	121	495	190	113	22	55	996
194	119	500	271	168	27	41	1126
196	141	695	338	161	30	69	1434
198	146	695	374	148	46	68	1477
200	121	615	317	113	31	63	1260
202	105	531	271	118	42	42	1109
204	111	516	261	98	38	41	1065
206	72	365	261	88	30	52	868
208	61	354	287	121	46	36	905
210	47	298	210	116	29	33	733
212	33	197	159	65	26	20	500
214	36	182	133	73	31	24	479
216	28	131	102	70	27	13	371
218	8	99	76	83	26	14	306
220	11	110	87	45	21	5	279
222	14	89	41	63	15	8	230
224	6	68	46	53	14	6	193
226		57	61	70	15	13	216
228	6	31	51	55	16	12	171
230		42	75	43	9	10	179
232		47	25	53	9	14	148
234		10	15	30	15	13	83
236		21	15	20	3	10	69
238			5	23	9	5	42
240			5	8	4	5	22
242	3		5	8	2	3	21
244				8	3	6	17
246			5	5	2	5	17
248						3	3
250				5	1	5	11
252				3		4	7
254			5		1	1	7
256				3			3
258			5				5
260					1		1
Total	1383	6778	4140	2390	675	959	16325

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1947-48 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Oct 346	Nov 347	Dec 348	Jan 349	Feb 350	Total
Under 154	238	5	1	10	82	336
154		2	1	7	73	83
156		3	2	6	66	77
158	3	9	1	12	67	92
160		5	2	6	92	105
162		9	2	4	103	118
164		8	1	6	124	139
166		2		3	162	167
168		2	1	2	141	146
170		1		2	141	144
172					110	110
174				1	101	102
176					108	108
178					49	49
180	3				33	36
182					16	16
184		2			14	16
186	22	1				23
188	30	6				36
190	57	9			2	68
192	76	13				89
194	178	9	2	2		191
196	202	19	2	2		225
198	309	29	2	3		343
200	346	30	3	2		381
202	376	40	7	4		427
204	298	44	7	4	2	355
206	300	54	8	8	2	372
208	311	50	10	7	2	380
210	298	58	11	10	5	382
212	202	51	8	9	2	272
214	210	48	9	6		273
216	123	53	9	7	7	199
218	134	37	8	4	2	185
220	142	43	8	4	5	202
222	134	27	8	6	2	177
224	112	41	8	6	2	169
226	98	39	9	9		155
228	128	39	8	7	2	184
230	107	46	9	6		168
232	107	40	7	7		161
234	63	35	5	13		116
236	68	37	7	7	2	121
238	60	39	6	8	2	115
240	55	22	4	4		85
242	25	20	4	6		55
244	38	19	3	4		64
246	19	14	4	2		39
248	19	8	1	2		30
250	8	8	1	2		19
252		5	1			6
254	3	1				4
256	8	2		1		11
258	3	1				4
260		1				1
262		1				1
266	3					3
Total	4,916	1,087	190	221	1,521	7,935

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1948-49 SEASON, GIVEN BY LUNAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Oct 358	Nov 359	Dec 360	Jan 361	Feb 362	Total
Under 154					11	11
154					5	5
156				2	3	5
158					8	8
160				2	5	7
162				2	14	16
164					14	14
166				2	8	10
168				2	5	7
170				4	3	7
172				2	5	7
174					3	3
176					3	3
178			5	2		7
180			11	2	5	18
182	16		16	4	16	52
184	29	4	64	13	3	113
186	53	6	80	27	8	174
188	90	20	91	45	19	265
190	138	22	301	76	38	575
192	175	39	317	88	35	654
194	240	72	312	121	78	823
196	240	61	398	152	108	959
198	290	108	420	148	105	1,071
200	244	119	349	139	135	986
202	212	130	430	128	87	987
204	179	117	322	130	54	802
206	134	100	220	108	24	586
208	90	69	199	69	41	468
210	142	56	156	81	27	462
212	90	52	97	78	19	336
214	106	33	102	51	16	308
216	53	28	38	45	19	183
218	53	15	54	40	11	173
220	45	11	11	16		83
222	12	6	5	11	5	39
224	12	2	5	7		26
226		4	16	5		25
228	4			5		9
230		2		5		7
232		2		2	3	7
234		2		2		4
236				2		2
238				4		4
242		2			3	5
244				2		2
246	4		5	2		11
250				2		2
262			5			5
Total	2,651	1,082	4,029	1,628	946	10,336

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1949-50 SEASON, GIVEN BY LUNAR MONTHS
(Numbers of Fish Are Given in Hundred Thousands, i.e., 00,000 Omitted)

	Numbers of fish taken				
	Oct	Nov	Dec	Jan	
	371	372	373	374	
Length mm.					
172				9	9
174				28	28
176				38	38
178	17		5	47	69
180	59	2	15	42	118
182	76	2	34	75	187
184	142	10	49	104	305
186	226	18	117	122	483
188	319	28	184	113	644
190	410	44	175	137	766
192	586	57	218	127	988
194	646	69	301	108	1,124
196	815	66	340	202	1,423
198	705	44	238	202	1,189
200	529	42	286	136	993
202	620	57	301	212	1,190
204	613	44	292	235	1,184
206	529	32	311	226	1,098
208	512	32	277	268	1,089
210	411	21	258	179	869
212	336	14	199	137	686
214	294	14	160	127	595
216	176	15	88	146	425
218	143	5	78	137	363
220	92	5	63	94	254
222	84	6	39	85	214
224	8	3	39	61	111
226	17	5	19	28	69
228	17	1	10	38	66
230			10	24	34
232			5	5	10
234				9	9
236			10		10
238	8		5	5	18
240			5	5	10
242				5	5
244				9	9
264				5	5
Total	8,390	636	4,131	3,530	16,687

LENGTH COMPOSITION OF THE SAN PEDRO COMMERCIAL CATCH OF PILCHARD DURING THE 1950-51 SEASON, GIVEN BY LUNAR MONTHS
(Nnumbers of Fish Are Given in Hundred Thousands, i.e., 00,000 Omitted)

	Numbers of fish taken					
	Oct	Nov	Dec	Jan	Feb	Total
	383	384	385	386	387	
Length mm.						
182	4					4
186	9	3				12
188	31	14	6			51
190	100	22	6			128
192	154	81	14			249
194	286	170	43	4	1	504
196	492	264	78	11	1	846
198	659	406	75	8	4	1,152
200	856	570	172	47	6	1,651
202	1,100	651	270	64	11	2,096
204	970	669	351	107	18	2,115
206	1,009	700	299	146	21	2,175
208	786	565	397	195	31	1,974
210	645	475	464	174	34	1,792
212	523	420	466	222	28	1,659
214	439	302	449	238	31	1,459
216	338	281	380	222	26	1,247
218	180	236	400	210	21	1,047
220	136	142	336	146	22	782
222	105	84	230	156	18	593
224	53	70	190	118	12	443
226	62	42	135	84	8	331
228	31	42	129	60	7	269
230	26	11	60	62	8	167
232	4	22	26	26	2	80
234		8	23	13	3	47
236		3	17	13		33
238		3	12	8	3	26
240	4		3	4		11
242				6		6
244		3		2	1	6
246			3			3
Total	9,002	6,259	5,034	2,346	317	22,958

LENGTH COMPOSITION OF THE CENTRAL CALIFORNIA COMMERCIAL CATCH OF PILCHARD
DURING THE 1930-31 SEASON, GIVEN BY CALENDAR MONTHS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Total
156			1					1
158								
160								
162				2				2
164				1				1
166				1				1
168								
170		1		2				3
172				1				1
174			2	1			3	6
176		3	2	2		2		9
178	2	3	4	4		1		14
180	1	9	11	8				29
182	1	8	20	7	1	1		38
184	2	6	12	7	1	2		30
186	8	16	19	13	1	2	3	62
188	10	10	31	13	3	2	1	70
190	12	8	22	14	5	1		62
192	21	13	14	13	2	2	3	68
194	19	15	29	7	3	3	3	79
196	24	13	22	7	4	3	4	77
198	25	22	31	13	5	2		98
200	32	16	25	7	7	3	1	91
202	35	31	47	16	7	8		144
204	54	39	72	22	22	10	6	225
206	75	73	87	33	32	11	6	317
208	109	105	145	55	44	23	5	486
210	112	154	176	85	68	26	27	648
212	110	183	273	117	108	37	41	869
214	116	185	285	147	128	42	50	953
216	83	145	303	141	103	57	58	890
218	79	134	245	115	86	54	58	771
220	44	83	149	102	70	45	60	553
222	21	58	91	68	45	40	33	356
224	19	41	68	51	39	31	51	300
226	16	33	54	38	23	28	26	218
228	9	28	49	32	22	29	43	212
230	9	19	32	28	19	23	43	173
232	10	20	24	26	16	28	55	179
234	9	23	21	25	16	33	51	178
236	7	12	28	26	19	43	62	197
238	10	21	13	18	17	52	60	191
240	9	17	24	22	14	53	73	212
242	7	13	16	19	14	45	71	185
244	9	8	22	16	10	48	72	185
246	8	10	15	16	7	42	54	152
248	5	8	8	14	9	42	52	138
250	5	6	9	10	5	36	58	129
252	5	3	4	7	4	31	29	83
254	3	3	2	6	3	20	36	73
256	3	2	3	5	1	14	17	45
258	2	3	4	4	1	15	20	49
260	1	3		2		11	8	25
262	1					5	10	16
264	1	2	1	2		4	8	18
266	1	1	2		1	5	5	15
268				1		1	1	3
270						2		2
272						1		1
274	1					1	1	3
276	1					1		2
278							1	1
Total	1146	1609	2517	1392	985	1021	1269	9939

LENGTH COMPOSITION OF THE CENTRAL CALIFORNIA COMMERCIAL CATCH OF PILCHARD
DURING THE 1931-32 SEASON, GIVEN BY CALENDAR MONTHS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Total
166		2			1			3
168		1			1			2
170	2	2						4
172		2		1	2	1		6
174	5	3		2	3	1		14
176	2		2	2	1			7
178	4	3	3	4	3	1		18
180	5	2	2	3	5	3		20
182	6	1	2	6	4	1		20
184	4	3	2	5	9	3		26
186	6	10	1	7	8	4		36
188	7	10	6	9	11	2		45
190	10	9	5	11	9	3		47
192	8	10	6	11	6	5	1	47
194	15	9	6	11	7	4	1	53
196	19	14	7	16	8	6		70
198	21	17	11	18	7	5	1	80
200	30	21	14	21	12	6		104
202	28	36	19	36	13	4	1	137
204	46	62	31	48	17	7	2	213
206	46	65	44	51	17	7	1	231
208	61	85	72	84	20	13	1	336
210	65	113	101	86	32	12	1	410
212	46	124	114	107	42	22	1	456
214	49	128	136	114	39	21	2	489
216	33	131	131	105	35	24	1	460
218	33	137	134	109	51	26	4	494
220	23	117	129	104	53	36	5	467
222	17	105	135	96	64	50	6	473
224	13	85	107	84	64	52	9	414
226	13	68	96	82	70	56	7	392
228	4	37	65	68	66	68	8	317
230	2	34	50	43	53	69	10	261
232	3	18	29	32	51	59	10	202
234	3	13	18	22	34	55	13	158
236		12	13	22	40	56	17	160
238	2	8	8	12	34	50	19	133
240		11	8	16	31	66	24	156
242		8	4	10	44	59	17	142
244		8	8	10	33	55	21	135
246		3	2	9	37	49	26	126
248	2	6	6	7	31	52	27	131
250		6	6	4	31	48	22	117
252		4	4	5	25	42	19	99
254		4	4	2	16	30	18	74
256		3	2	3	13	30	15	66
258		1	1	2	15	23	14	56
260		1	2	1	7	16	9	36
262		1	1	1	5	10	6	24
264		1	2	1	4	12	8	28
266		1		1	4	5	1	12
268				1	1	4	4	10
270			1	1	1	10	1	14
272					2	3	1	6
274					1	1		2
276					2		1	3
278					1	1		2
280					1			1
288					1			1
Over 288					1			1
Total	634	1555	1550	1506	1199	1248	355	8047

LENGTH COMPOSITION OF THE CENTRAL CALIFORNIA COMMERCIAL CATCH OF PILCHARD
DURING THE 1932-33 SEASON, GIVEN BY CALENDAR MONTHS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Total
Under 154		3	1		2			6
154								
156		1	1	2				4
158		3	1	2				6
160		2	3	2				7
162		5	8	2	2			17
164		8	2	2				12
166		1	8	6				15
168		3	8	3				14
170		5	10	9	2			26
172		3	10	10	2			25
174		1	3	5	2			11
176		1	8	6				15
178		1	8	3				12
180			7	10				17
182		1	3	10	2			16
184			3	6	2			11
186		3	3					6
188			1	3				4
190		1	1	2				4
192			1	3	2			6
194		1	3					4
196		3	3	3			1	10
198		5	3	2				10
200		3	3			1	1	8
202		7	2	3	2			14
204	2	7	7	5		1	1	23
206	2	15	13	3		1	1	35
208	2	28	23	6	5	1	3	68
210	4	34	27	13	10	5	6	99
212	5	52	48	15	5	1	4	130
214	10	72	66	25	16	3	2	194
216	11	76	86	45	12	3	4	237
218	17	95	109	56	41	2	3	323
220	13	136	164	111	64	5	2	495
222	13	130	230	138	91	15	3	620
224	10	152	240	170	126	26	3	727
226	9	137	282	184	186	38		836
228	10	119	246	212	184	50	6	827
230	6	97	204	203	200	57	6	773
232	4	67	161	127	161	83	6	609
234	4	54	134	124	179	95	17	607
236	3	36	100	101	120	85	20	465
238	2	23	72	50	109	114	33	403
240	2	17	46	43	82	116	34	340
242	2	13	29	36	68	116	35	299
244	2	8	24	25	48	93	36	236
246	2	9	26	17	27	108	42	231
248	2	3	12	25	48	98	44	232
250	2	3	15	15	27	105	44	211
252	1	3	11	13	16	76	36	156
254	1	3	5	10	12	64	38	133
256	2	6	6	10	9	68	32	133
258			9	3	4	61	24	101
260			2	5	5	33	18	63
262			1	6	5	22	18	52
264			1	2	2	10	13	28
266					2	7	5	14
268			4	2		5	4	15
270			1		2	7	3	13
272			1		2	1	1	5
274			2			2		4
276					2		1	3
286						1		1
Total	143	1456	2511	1894	1888	1579	550	10021

LENGTH COMPOSITION OF THE CENTRAL CALIFORNIA COMMERCIAL CATCH OF PILCHARD
DURING THE 1933-34 SEASON, GIVEN BY CALENDAR MONTHS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Total
Under 154	1							1
154								
158	2							2
160	2							2
162	1							1
164								
166	2							2
168								
170	6	2						8
172	6							6
174	6	1						7
176	11	2						13
178	22	1						23
180	30	2	4	1				37
182	41	2	3	1		2	2	51
184	31	7	3	1	2	4	3	51
186	36	8	10	2	5	5	2	68
188	38	13	10	9	3	2		75
190	43	16	16	14	3	10	4	106
192	43	16	29	11	3	4	2	108
194	38	23	32	23	12	12	3	143
196	26	20	46	26	12	21	7	158
198	33	19	37	25	17	17	6	154
200	25	19	44	40	19	19	9	175
202	19	21	61	39	27	19	10	196
204	17	19	66	39	24	17	6	188
206	12	20	70	28	17	17	9	173
208	10	16	67	36	16	26	9	180
210	10	11	58	24	17	19	13	152
212	13	16	46	23	10	10	4	122
214	21	18	69	47	24	19	6	204
216	28	22	61	47	21	9	12	200
218	41	26	52	46	14	5	3	187
220	49	30	58	62	19	11	6	235
222	54	38	84	70	36	24	6	312
224	67	50	102	171	37	12	6	445
226	94	47	76	180	70	26	12	505
228	73	67	69	195	79	58	10	551
230	109	92	92	258	133	80	33	797
232	134	68	64	272	185	130	38	891
234	115	74	52	346	183	141	63	974
236	112	77	56	265	214	155	81	960
238	76	76	19	263	209	161	81	885
240	81	72	21	242	197	165	123	901
242	52	44	14	156	154	153	95	668
244	43	49	7	96	152	176	133	656
246	33	30	10	125	103	130	142	573
248	33	22	6	47	89	158	145	500
250	25	23	1	27	74	123	142	415
252	27	29	3	57	74	115	114	419
254	25	17		18	38	101	92	291
256	22	12	1	29	27	71	72	234
258	16	14	3	48	21	75	66	243
260	14	11		24	17	52	87	205
262	8	7		13	12	40	44	124
264	8	5		13	10	33	31	100
266	5	5			7	17	19	53
268	5	2		1	5	11	19	43
270	2	2	1	23	5	9	15	57
272	1			1	1	3	9	15
274	1				1	5	3	10
276	1				1	3		5
278					1			1
280					1			1
282						3	3	6
284		1						1
Total	1899	1284	1523	3484	2401	2478	1800	14869

LENGTH COMPOSITION OF THE CENTRAL CALIFORNIA COMMERCIAL CATCH OF PILCHARD
DURING THE 1934-35 SEASON, GIVEN BY CALENDAR MONTHS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Total
160						1		1
162			3	3		2		8
164						1		1
166		2	3				3	8
168			15	16	1	2		34
170			22	24	1	1		48
172		2	25	24	1	6		58
174		2	22	7	1	5		37
176		3	15	18	3	4	2	45
178			19	18	1	5		43
180		6	50	23	4	17	2	102
182		18	38	33	7	23		119
184		21	54	39	8	33	2	157
186		19	92	79	19	35	3	247
188	3	26	92	102	25	28	2	278
190		21	80	85	36	32	2	256
192	5	19	76	104	23	45	2	274
194	14	21	73	82	37	42	9	278
196	21	11	85	65	21	22	10	235
198	15	16	35	30	30	15	9	150
200	32	31	41	34	9	14	10	171
202	58	42	34	37	28	18	4	221
204	72	73	48	19	20	9	10	251
206	92	89	45	53	22	10	8	319
208	106	138	73	58	11	8	12	406
210	133	191	88	70	24	7	10	523
212	135	261	187	140	38	10	17	788
214	173	357	272	201	37	23	15	1078
216	152	446	291	225	59	18	25	1216
218	184	466	446	268	103	28	23	1518
220	163	443	573	295	85	45	30	1634
222	132	443	654	353	131	43	40	1796
224	113	365	513	332	125	64	36	1548
226	74	253	538	271	131	61	56	1384
228	59	192	465	230	127	72	48	1193
230	39	139	348	215	127	85	44	997
232	28	93	263	216	130	86	46	862
234	21	96	228	151	152	113	55	816
236	17	83	155	132	164	95	36	682
238	15	44	108	137	222	133	49	708
240	6	48	50	124	224	158	69	679
242	22	16	38	99	255	173	52	655
244	15	25	32	68	242	145	77	604
246	9	22	10	60	214	171	71	557
248	8	18	13	53	202	167	75	536
250	6	13	10	31	177	156	63	456
252	4	9		23	152	119	55	362
254	9	16		24	130	136	77	392
256	7	11	3	13	130	105	64	333
258	9	15		8	97	77	75	281
260	3	5	3	10	69	72	44	206
262	3	13		8	43	58	55	180
264	1	4		4	25	32	33	99
266	3			1	27	25	18	74
268	3			2	11	29	15	60
270	3	2	3	2	5	17	9	41
272	3			4	13	10	12	42
274					3	6		9
276	1	2			5	8	4	20
278	1			1	3	5	2	12
280								
282						1		1
284						1	2	3
Total	1972	4651	6331	4724	3990	2932	1492	26092

LENGTH COMPOSITION OF THE CENTRAL CALIFORNIA COMMERCIAL CATCH OF PILCHARD DURING THE 1935-36 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Total
Under 154			2	9	1			12
154			4	2				6
156			2	1				3
158			8		1	5		14
160		1	2	2	7	3		15
162			3	5	3	2		13
164	3	3	1	2	6			15
166	1	5	6	2	1	2		17
168	2	7	4	5	1			19
170	2	10	5	5	4	3		29
172	1	10	2	7	2	2		24
174	3	9	5		3			20
176	1	17	7	7	5			37
178	1	14	6	4	1	1		27
180		4	7	2	4	2		19
182		4	5	3	4	4		20
184		3	2	4	3			12
186		8		1	4	5		18
188		17	2	4	6	12		41
190		3	8	2	6	2		21
192		7	9	2	11	4	2	35
194	1	8	7	14	11	10		51
196	1	16	9	7	17	18	5	73
198	3	25	20	5	25	13		91
200	6	37	28	12	26	45	2	156
202	8	89	62	29	40	37	5	270
204	16	114	99	44	54	42	8	377
206	20	205	166	75	79	64	8	617
208	22	262	291	109	93	66	19	862
210	34	390	319	129	162	103	16	1153
212	28	460	442	169	154	97	46	1396
214	31	427	535	220	161	128	37	1539
216	30	422	535	221	224	139	50	1621
218	24	333	468	277	194	105	46	1447
220	22	333	445	323	166	123	55	1467
222	19	270	349	347	174	139	53	1351
224	9	216	316	303	167	130	61	1202
226	8	172	236	348	204	132	50	1150
228	6	108	195	334	184	143	64	1034
230	6	104	165	314	221	141	64	1015
232	3	61	126	234	159	143	42	768
234	2	54	79	241	162	115	72	725
236		26	51	263	135	128	42	645
238	2	18	46	213	166	138	59	642
240	1	27	37	178	139	166	50	598
242	1	17	39	171	129	170	50	577
244	1	17	24	147	102	161	40	492
246	3	24	13	143	125	188	42	538
248	2	6	13	136	116	189	50	512
250	1	14	15	103	102	229	61	525
252	2	11	7	79	55	182	72	408
254	1	11	11	73	59	164	24	343
256		13	2	64	44	117	22	262
258	1	7	16	58	41	141	26	290
260		6	10	45	36	109	19	225
262	1	6		45	27	54	13	146
264	1	3	3	33	31	60	16	147
266			5	25	16	49	13	108
268		1	2	14	6	35	11	69
270				12	9	27	2	50
272		1	4	10	8	14	2	39
274				7	1	5		13
276		1		4	5	9		19
278				1	2	1	2	6
280			1			5	2	8
286		1						1
Total	330	4438	5281	5648	4104	4321	1323	25445

LENGTH COMPOSITION OF THE CENTRAL CALIFORNIA COMMERCIAL CATCH OF PILCHARD
DURING THE 1936-37 SEASON, GIVEN BY CALENDAR MONTHS
(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Total
Under 154	9		1	4	4			18
154	6	2	1	2	3			14
156	7			4			7	18
158	6			2	3		7	18
160	6	2	3	11		2	4	28
162	6	11	18	11	1	2	9	58
164	6	3	35	48	7	2	9	110
166	8	2	34	46	19	14	22	145
168	10	3	25	83	22	9	32	194
170	19	2	27	73	41	14	45	221
172	12	5	19	97	33	7	62	235
174	15	7	27	110	26	11	47	243
176	11	5	66	116	24	10	63	295
178	8		27	106	54	11	39	245
180	9	5	51	69	33	9	53	229
182	11	3	32	39	36	5	41	167
184	11	7	17	63	22	6	42	168
186	13	8	43	41	39	9	43	196
188	25	16	38	53	53	6	40	231
190	17	18	63	33	58	8	50	247
192	30	22	62	71	106	13	40	344
194	28	37	81	47	79	13	46	331
196	41	27	96	51	106	23	48	392
198	48	37	109	77	146.	19	42	478
200	58	55	75	90	135	29	40	482
202	62	61	136	104	155	27	35	580
204	58	42	192	135	138	32	37	634
206	67	71	198	117	185	23	42	703
208	40	88	269	154	154	45	23	773
210	69	115	320	245	194	30	24	997
212	77	185	398	277	262	49	10	1258
214	84	279	565	392	266	31	14	1631
216	86	383	789	415	400	50	15	2138
218	98	472	786	424	390	84	17	2271
220	95	661	728	509	322	92	20	2427
222	92	590	651	582	402	87	20	2424
224	107	752	648	568	438	97	27	2637
226	78	702	489	506	430	113	30	2348
228	65	557	410	478	395	116	36	2057
230	39	529	250	497	397	139	27	1878
232	17	447	259	335	345	105	30	1538
234	23	286	106	274	279	121	37	1126
236	13	196	71	249	241	120	36	926
238	10	141	57	153	360	127	40	888
240	4	131	35	137	199	98	73	677
242	2	130	20	101	199	106	63	621
244	2	56	13	71	174	82	92	490
246		43	9	79	168	107	91	497
248	2	10	1	48	187	91	81	420
250	2	46	23	50	139	82	91	433
252		20	1	29	145	76	72	343
254		8	8	68	116	60	67	327
246	2	24	1	42	69	59	78	275
258		14	1	27	98	45	60	245
260		4	8	16	44	38	52	162
262		8		20	46	21	45	140
264			8	12	35	25	30	110
266		8			19	12	26	65
268				2	19	11	19	51
270		8		10	14	4	16	52
272				2	10	3	11	26
274		4		8	7	4	5	28
276					1	2	6	9
278						2	1	3
280					3			3
282							2	2
284							1	1
286						1		1
Total	1614	7348	8410	8483	8495	2639	2333	39322

LENGTH COMPOSITION OF THE CENTRAL CALIFORNIA COMMERCIAL CATCH OF PILCHARD DURING THE 1937-38 SEASON, GIVEN BY CALENDAR MONTHS

(Numbers of Fish are Given in Hundred Thousands, i.e., 00,000 Omitted)

Numbers of Fish Taken

Length mm	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Total
Under 154	8	42	131	74	79	20		354
154		8	12	10	19	1		50
156		8	24	13	10	4		59
158	1	7	18	12	11	6		55
160	1	9	18	15	15	5		63
162		6	13	13	9	3		44
164		9	16	8	4	3		40
166		7	12	9	13	3		44
168		5	6	6	17	2		36
170		6	12	8	8	3		37
172		4	15	11	15	4		49
174	1	2	15	10	17	5		50
176	1	7	25	7	23	3		66
178	1	5	23	11	16	2		58
180	1	8	28	20	24	4		85
182	2	14	40	18	33	1		108
184	2	17	66	32	50	9		176
186	4	20	66	44	38	10		182
188	3	26	113	40	57	13		252
190	4	31	108	73	62	14		292
192	5	33	136	90	93	15		372
194	4	50	164	78	110	19		425
196	8	57	180	91	102	19		457
198	8	59	195	97	122	26		507
200	10	68	271	131	130	24		634
202	15	70	265	104	155	37		646
204	15	100	251	150	143	35		694
206	19	105	244	121	144	30		663
208	14	107	256	118	149	49		693
210	22	120	264	145	137	38	1	727
212	27	142	285	145	164	37		800
214	18	123	367	173	161	38		880
216	24	204	267	157	178	63	1	894
218	26	174	362	167	193	47		969
220	26	233	326	207	171	53		1016
222	23	234	284	207	187	66	2	1003
224	18	186	304	145	177	56		886
226	16	186	328	155	183	80	1	949
228	13	191	250	119	155	54		782
230	10	151	156	127	141	60	2	647
232	8	109	200	105	143	59	2	626
234	6	100	143	101	109	55	3	517
236	3	106	165	88	91	58	2	513
238	3	74	97	76	84	59	2	395
240	2	75	103	66	95	55	3	399
242	3	70	132	66	83	77	3	434
244	1	56	111	63	50	56	2	339
246	1	66	101	41	47	69	2	327
248	2	35	55	40	37	54	3	226
250	2	47	59	29	33	56	5	231
252	2	37	47	28	31	45	3	193
254		25	29	21	28	42	2	147
256		12	44	18	16	29	3	122
258	1	17	29	15	17	33	2	114
260	1	20	22	7	14	20	3	87
262		9	23	8	9	16	2	67
264		12	19	5	7	16	2	61
266		5	6	2	7	5	1	26
268		5	12	4		5		26
270		4		2	3	1		10
272		4	3		2	2		11
274		2	3	2	1	2		10
276		1						1
278			2					2
280				2				2
282						1		1
Total	385	3725	7321	3950	4422	1776	52	21631